Midmark Compressors

ClassicSeries®

Model Numbers:

CL21

CL22

CL32

CL52

PowerAir®

Model Numbers:

P21

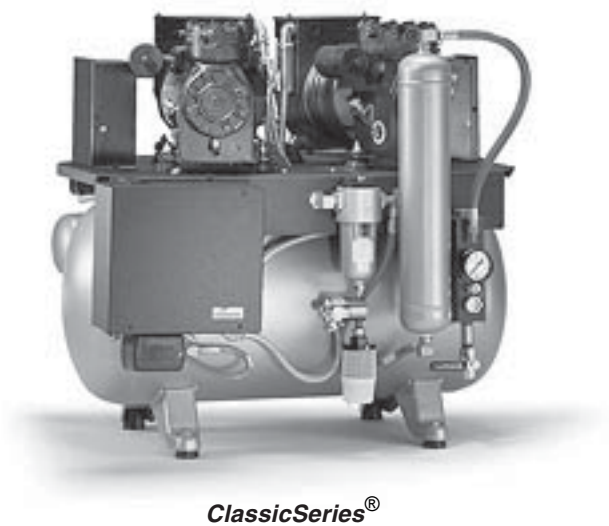
P22

P32

P52

P72

Service and Parts Manual



ClassicSeries®

Model CL32

Some Models NO LONGER IN PRODUCTION
Some service parts may not be available for this product.

PowerAir®

Model P22

FOR USE BY MIDMARK TRAINED TECHNICIANS ONLY

SF-1899

Part No. 10540900 Rev.B (5/20/2015)

Style B

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** Indicates multiple pages due to model / serial number break(s)*

General Information

Symbols

DANGER
Indicates an imminently hazardous situation which will result in serious or fatal injury if not avoided. This symbol is used only in the most extreme conditions.

WARNING
Indicates a potentially hazardous situation which could result in serious injury if not avoided.

CAUTION
Indicates a potentially hazardous situation which may result in minor or moderate injury if not avoided. It may also be used to alert against unsafe practices.

Equipment Alert
Indicates a potentially hazardous situation which could result in equipment damage if not avoided.

In Section A, test the components in the order indicated. (ex. **1st** ✓ *then,* **2nd** ✓*)*

Refer to Section B for component testing procedures.

The symbols below may be used in this manual to represent the operational status of table functions and components.

Indicates the function / component is working properly. No action required.

Indicates the function / component is working, but a problem exists.

Indicates the function / component is not working at all.

Ordering Parts

The following information is required when ordering parts:
- Serial number & model number
- Part number for desired part.
  [Refer to Exploded Views / Parts Lists section]

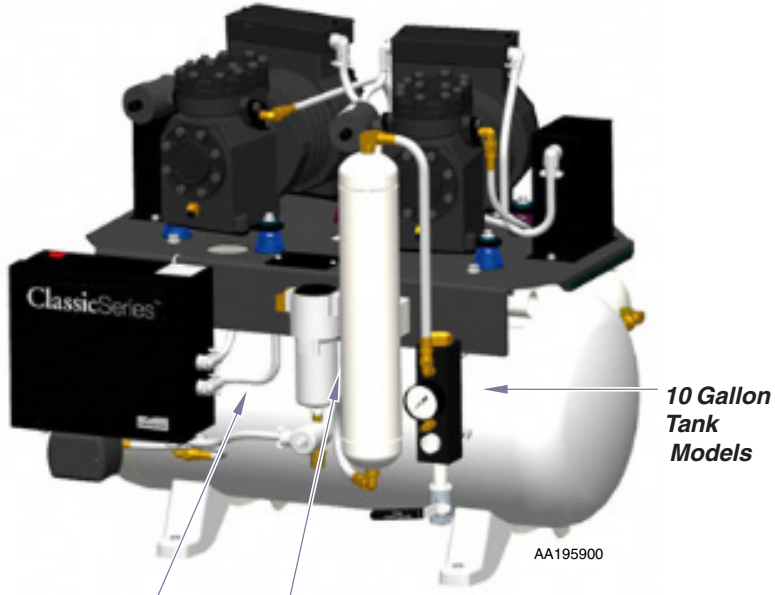
Non-warranty parts orders may be faxed to Midmark using the Fax Order Form in the back of this manual.

For warranty parts orders, call Midmark's Service Department with the required information.

Customer Service: 1-800-643-6275

Technical Service: 1-888-279-1260

Serial Number Location



Serial / Model Number Location

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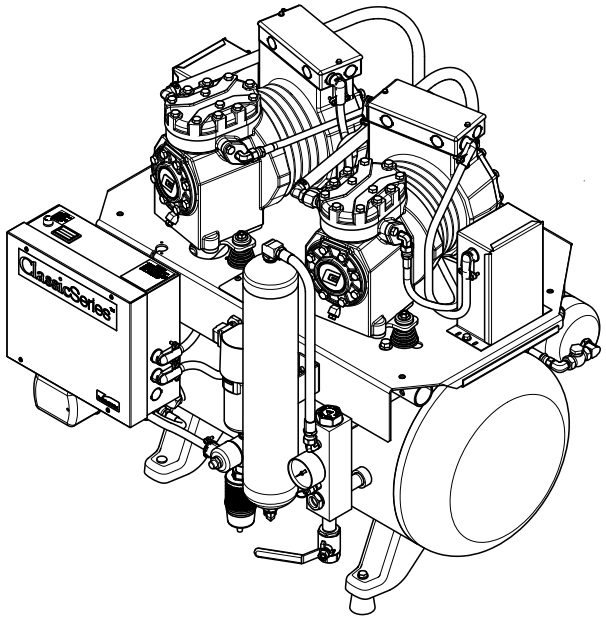
General Information

Weights, Dimensions, Electrical Specifications

ClassicSeries® Lubricated Compressor Models



Classifications: Class 1, No Applied Part

Model	# of Users	CFM @ 80 PSI	Total HP	Tank Capacity	Voltage	Total Amps	Breaker Size (Amps)	Sound Level (dbA)	Dimensions H x W x D (IN.)	Product Weight (lbs.)	Fresh Air Intake Pipe Size
CL21	1 - 3	5.3	1.0	10	115	12.4	20	68	29 x 26 x 24	202	2"
CL22	1 - 3	5.3	1.0	10	208-230	6	20	68	29 x 26 x 24	202	2"
CL32	3 - 5	10.6	2.0	20	208-230	12	20	71	31 x 33 x 26	329	2"
CL52	5 - 7	15.9	3.0	32	208-230	18	30	75	32 x 41 x 27	460	2"

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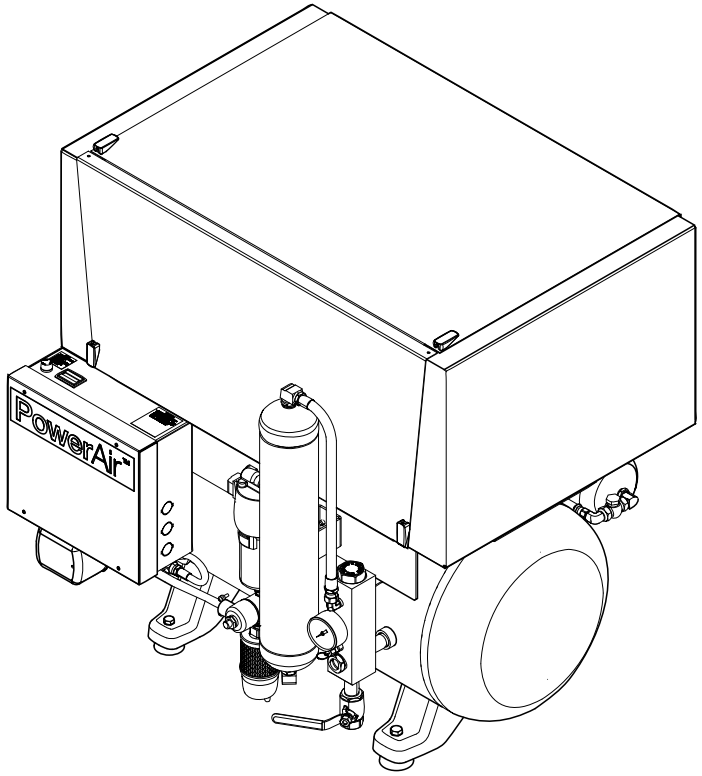
Weights, Dimensions, Electrical Specifications

PowerAir® Oil-Less Models



Classifications: Class 1, No Applied Part

Model	# Users	CFM @ 80 PSI	Total HP	Tank Capacity	Voltage	Total Amps	Breaker Size	Sound Level (dBA)	Sound Level (dBA) With Quiet Cover	Dimensions H x W x D (IN.)	Dimensions With Sound Cover H x W x D (IN.)	Product Weight (LBS.)	Fresh Air Intake Pipe Size
P21	1 - 3	5.2	1.5	10	115	16.0	20	65	60	27 x 26 x 24	32 x 26 x 25	225	2"
P22	1 - 3	5.2	1.5	10	208-230	7.0	20	65	60	27 x 26 x 24	32 x 26 x 25	225	2"
P32	3 - 5	7.8	2.25	20	208-230	11.0	20	67	62	29 x 33 x 26	33 x 33 x 28	295	2"
P52	5 - 7	10.6	3.2	20	208-230	20.0	30	70	65	31 x 33 x 26	33 x 33 x 28	345	2"
P72	7 - 10	15.9	4.8	32	208-230	29.0	40	73	68	33 x 40 x 27	39 x 40 x 30	425	2"

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General Information

Model Identification / Compliance Chart

Model	Description	Serial Number Prefix	Complies To:		Electrical Supply Requirements:		
			UL 60601-1	CAN/CSA 22.2, #601.1-M90	VAC	Amps	Cycles (Hz)
CL21	ClassicSeries Lubricated Compressor 3 User		X	X	115	12.4	60
CL22	ClassicSeries Lubricated Compressor 3 User		X	X	208-230	6	60
CL32	ClassicSeries Lubricated Compressor 5 User		X	X	208-230	12	60
CL52	ClassicSeries Lubricated Compressor 7 User		X	X	208-230	18	60
P21	PowerAir Oil-Less Compressor 3 User		X	X	115	16	60
P22	PowerAir Oil-Less Compressor 3 User		X	X	208-230	7	60
P32	PowerAir Oil-Less Compressor 5 User		X	X	208-230	11	60
P22	PowerAir Oil-Less Compressor 7 User		X	X	208-230	20	60
P72	PowerAir Oil-Less Compressor 10 User		X	X	208-230	29	60

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Warranty Information

LIMITED WARRANTY

Midmark Corporation ("Midmark") warrants to the original purchaser its new ClassicSeries® and PowerAir® products and components (except for components not warranted under "Exclusions") manufactured by Midmark to be free from defects in material and workmanship under normal use and service. Midmark's obligation under this warranty is limited to the repair or replacement, at Midmark's option, of the parts or the products the defects of which are reported to Midmark within the applicable warranty period and which, upon examination by Midmark, prove to be defective.

APPLICABLE WARRANTY PERIOD

The applicable warranty period, measured from the date of installation for the original user, shall be:

• ClassicSeries® Lubricated Compressors: Two (2) years or 1,500 usage hours (whichever comes first)

• PowerAir® Oil-less Compressors: Five (5) years or 3,500 usage hours (whichever comes first)

EXCLUSIONS

This warranty does not cover and Midmark shall not be liable for the following: (1) repairs and replacements because of misuse, abuse, negligence, alteration, accident, freight damage, or tampering; (2) products which are not installed, used, and properly cleaned as required in the Midmark "Installation" manual and or "maintenance" guide for this applicable product; (3) products considered to be of a consumable nature; (4) accessories or parts not manufactured by Midmark; (5) charges by anyone for adjustments, repairs, replacement parts, installation, or other work performed upon or in connection with such products which is not expressly authorized in writing in advance by Midmark.

EXCLUSIVE REMEDY

Midmark's only obligation under this warranty is the repair or replacement of defective parts. Midmark shall not be liable for any direct, special, indirect, incidental, exemplary, or consequential damages or delay, including, but not limited to, damages for loss of profits or loss of use.

NO AUTHORIZATION

No person or firm is authorized to create for Midmark any other obligation or liability in connection with the products.

THIS WARRANTY IS MIDMARK'S ONLY WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. MIDMARK MAKES NO IMPLIED WARRANTIES OF ANY KIND INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS.

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Section A

Troubleshooting

Function / System — Go To Page:
Compression Cycle A-2
Purge Cycle A-4

Click GO TO PAGE: button (then enter desired page number) to view any page in this document.

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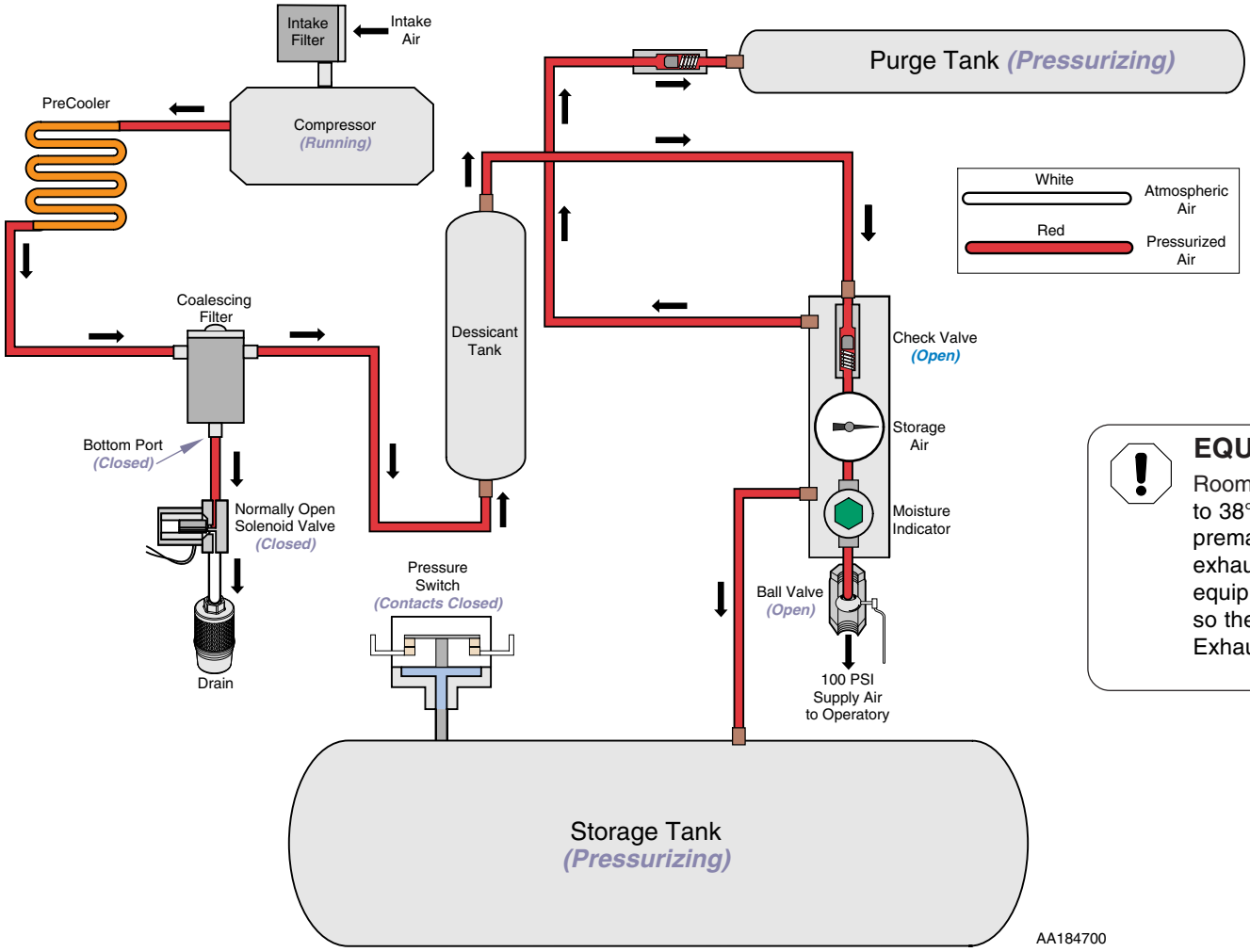
Troubleshooting

Compression Cycle

Atmospheric air is drawn in through intake filters to the compressor head(s) where air is compressed and exhausted. Air travels through the pre-cooler where it is cooled 10 to 15 ° F (-12.2 to -9.4 Celsius) within ambient room temperature. Cool air enters the coalescent filter, which removes 99.9997% of all particulate matter.

As the clean air travels through the desiccant tank it is dried to -25°F (-31.7 Celsius) dew point. The clean dry air flows into the main storage tank through a check valve. Some air is directed to the purge tank. As both tanks fill, the pressure switch opens at preset pressure and stops the compressor.



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High Pressure A-13
Excessive Noise A-14
Overheating A-15
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Excessive Oil Use (Lubricated Only) A-17
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EQUIPMENT ALERT

Room temperature should be between 40° and 100°F (4°C to 38°C). Lack of proper ventilation is the main reason for premature compressors failures. Whenever possible, use exhaust fan to bring cool air from dental office to the equipment room, or run fresh air intake lines to the outside so the compressor can breathe in fresh, outside air. Exhaust the stale, hot air out through the roof or side wall.

Compression Cycle

Models: *Serial Numbers:* ***All***

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Compression Cycle Electrical Schematic

Refer to: Wire Diagrams D-1
Go To Page:

•Supply Line Voltage is *always* present on one side of the Contactor contacts.

• Line Voltage is also being supplied to the 240 / 24 VAC transformer energizing it.

•The Transformer supplies 24 VAC to the On/Off switch on the wall and to one side of the 24 VAC Contactor Coil. When the On/Off switch is turned to the on position and the Pressure Switch is closed, the Contactor Coil is energized closing the contacts.

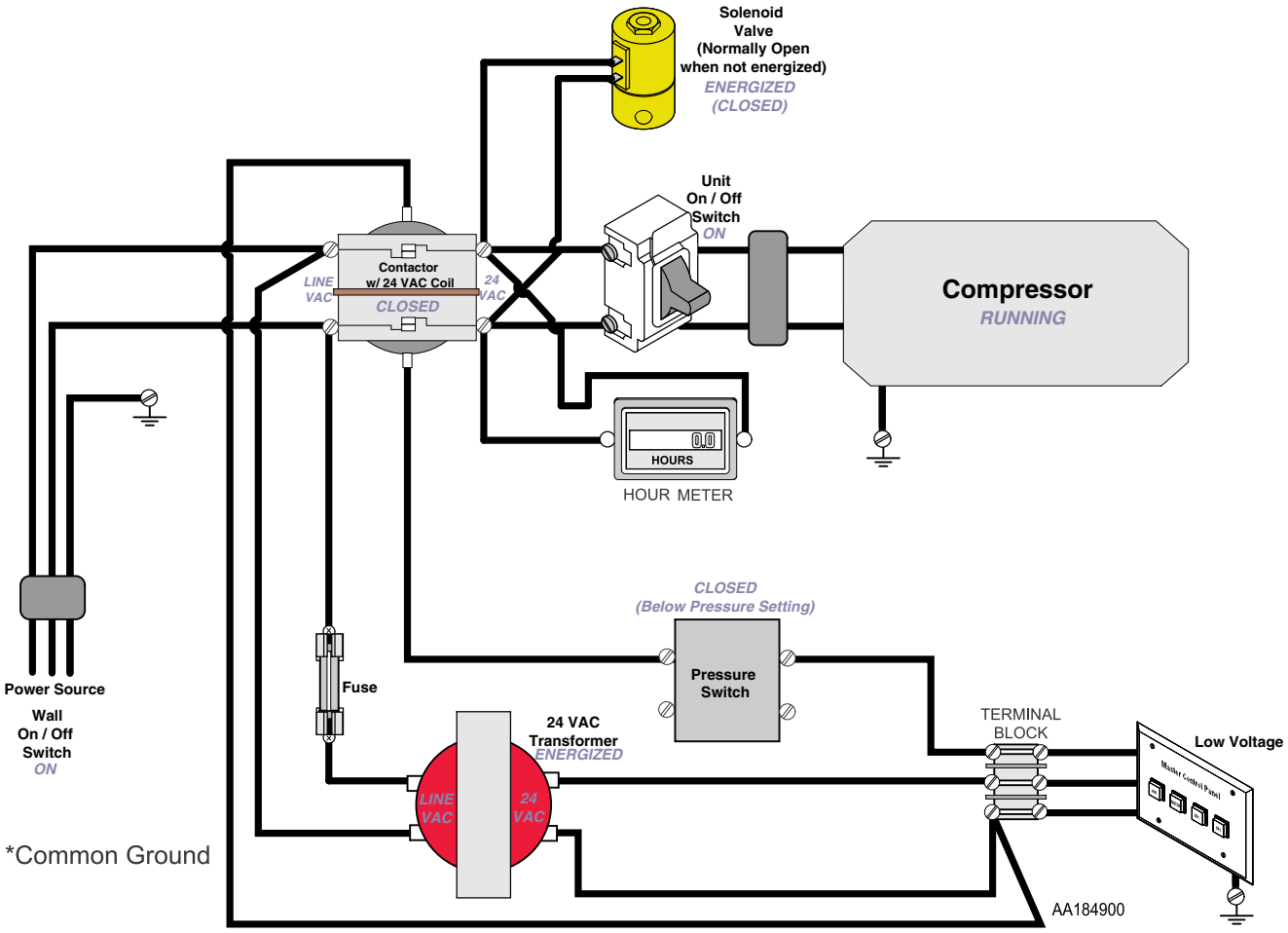
•With the contacts closed, line voltage is supplied to one side on the Vac Unit On/Off switch.

•When the Vac Unit On/Off switch is turned on, line voltage is supplied to the motor.

•If the Pressure Switch is at 80 PSI (+ / - 5 PSI) or below it's contacts are closed.

•If the Contactor is closed, Line voltage is then supplied to the Compressor energizing it and the normally open Solenoid Valve, closing the valve. This prevents the compressed air from being discharged.

The system will continue to run until the pressure inside the system reaches 100 PSI (+ / - 5 PSI).



Earlier Low Voltage Single Head Unit Shown

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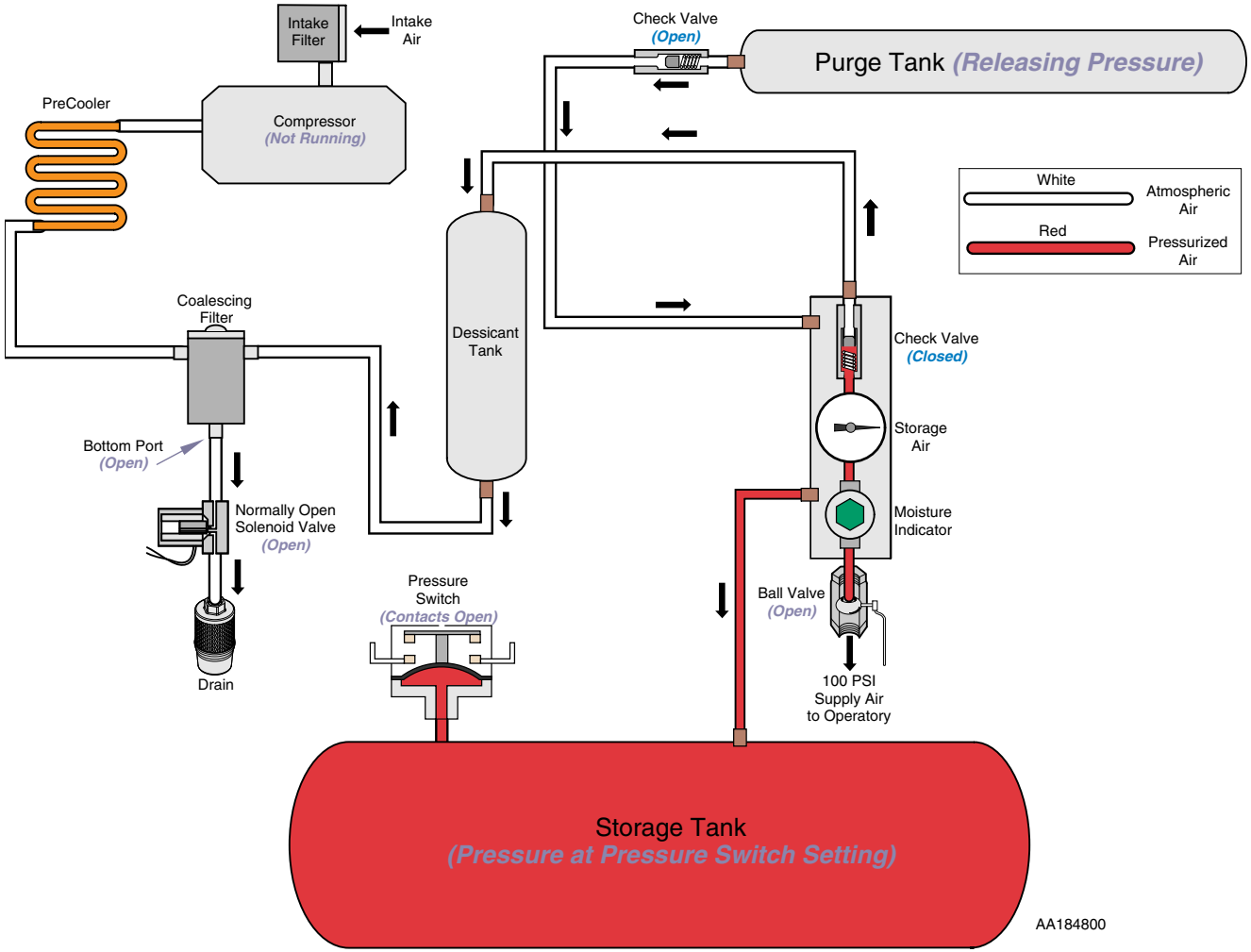
Troubleshooting

Note:

Under normal operation conditions, a small amount of moisture with some oil may be under the unloader exhaust muffler. This is not a malfunction. It is evidence of what the filter on the Desiccant Drying System captured the moisture, and did not permit it to enter the operatory air supply.



Troubleshooting — Go To Page:

Motor runs Intermittently or "Chugs"
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Element Indicator is Red A-12
High Pressure A-13
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Overheating A-15
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Compressor Tripping Circut Breaker A-18

Purge Cycle

The pressure switch will open, shutting off electrical current to compressor head(s) and the solenoid/purge valve.

A mechanical valve on the pressure switch opens up to unload the compressor heads. At the same time the unloader solenoid opens, starting the purge cycle.

Air from the purge tank flows back through the metered orifice.

The clean dry air drives out the moisture from the desiccant beads.

Purge Cycle

Models: *Serial Numbers:* ***All***

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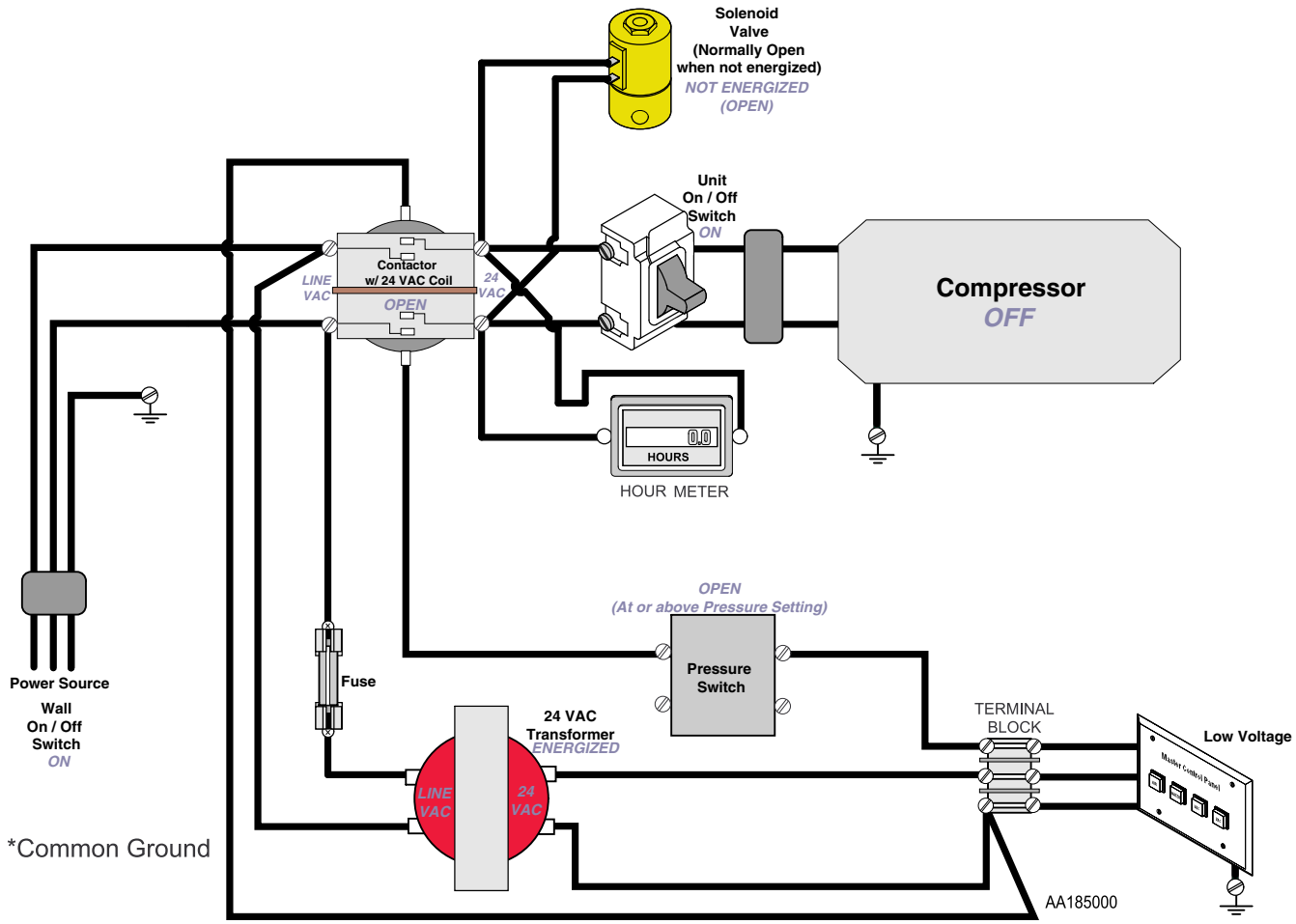
Troubleshooting

Purge Cycle
Electrical Schematic

- Pressure inside the system reaches 100 PSI (+ / - 5 PSI) causing the Pressure Switch Contacts to open.
- Power is removed from the coil of the Contactor which opens the Contactor, stopping the motor.
- At the same time, power is removed from the Normally Open Solenoid Valve, Opening the valve, allowing pressure to be released from the top of the compressor head to the Exhaust Muffler. It also allows the Purge Tank to release its pressure thru the Desiccant Tank to the Exhaust Muffler.
- As long as the Wall On / Off Switch is On, it is providing power to one side of the Pressure Switch.

Refer to: Go To Page:
Wire Diagrams D-1



Earlier Low Voltage Single Head Unit Shown

Note:
The compression and purge cycles will continue as the pressure inside the system fluctuates between the 80 PSI and 100 PSI pressure settings.

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Troubleshooting

Compression Cycle

Problem: *Compressor will not Start*

Refer To:	Go To Page:
Pressure Switch	B-2
ON/OFF Switch	B-23
Capacitor	B-19
Compressor Heads	B-29
Low Voltage	B-16

Thermal Overload Cut 5th ✓
Allow compressor to cool, then restart.

Motor/Compressor Frozen 6th ✓
Refer to: Section B Compressor Heads

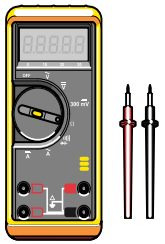
Lubricated Models Only
Check Start Relay 3rd ✓
(Motor may hum but not Start)
Tap capacitor box lightly. If unit starts, relay is sticking and needs replaced.
Check Relay for continuity.
Refer to Section B - Start Relay

Check Capacitor 4th ✓
Refer to: Section B Capacitor

Check Low Voltage 1st ✓
Refer to: Section B Low Voltage

Check voltage at Breaker 2nd ✓
Was proper voltage is measured at the breaker and not at motor terminals?
If yes, check the in the following order :

- *Check for broken or loose wires.*
- *If there is Pressure, Perform Pressure Switch Adjustment. (Refer to: B Pressure Switch)*
- *Check voltage at On/Off Switch. (Refer to: B On/Off Switch)*



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Compression Cycle

Models: *All*
Serial Numbers:

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Troubleshooting

Compression Cycle & Purge Cycle

Problem: *Motor runs Intermittently or "Chugs" -* ***ClassicSeries® Lubricated Models***

Refer To: — **Go To Page:**

Start Relay B-27
Capacitor B-19
Solenoid B-12
Check Valve B-21

1st ✓ Check Voltage in Breaker
Note: If circuit breaker is tripped, measure voltage at the line side of the vacuum switch while the unit is running. Voltage should be in the range of ***208-230 (for 230 volt units) and 108-132 (for 120 volt units).*** *Voltage outside this range may result in failure to start and possible damage to unit. Install a buck/boost transformer as required.*

2nd ✓ Check Low Voltage
Refer to: Section B Low Voltage

3rd ✓ Check On/Off Switch
Refer to: Section B On/Off Switch

4th ✓ Check Pressure Switch
Refer to: Section B Pressure Switch

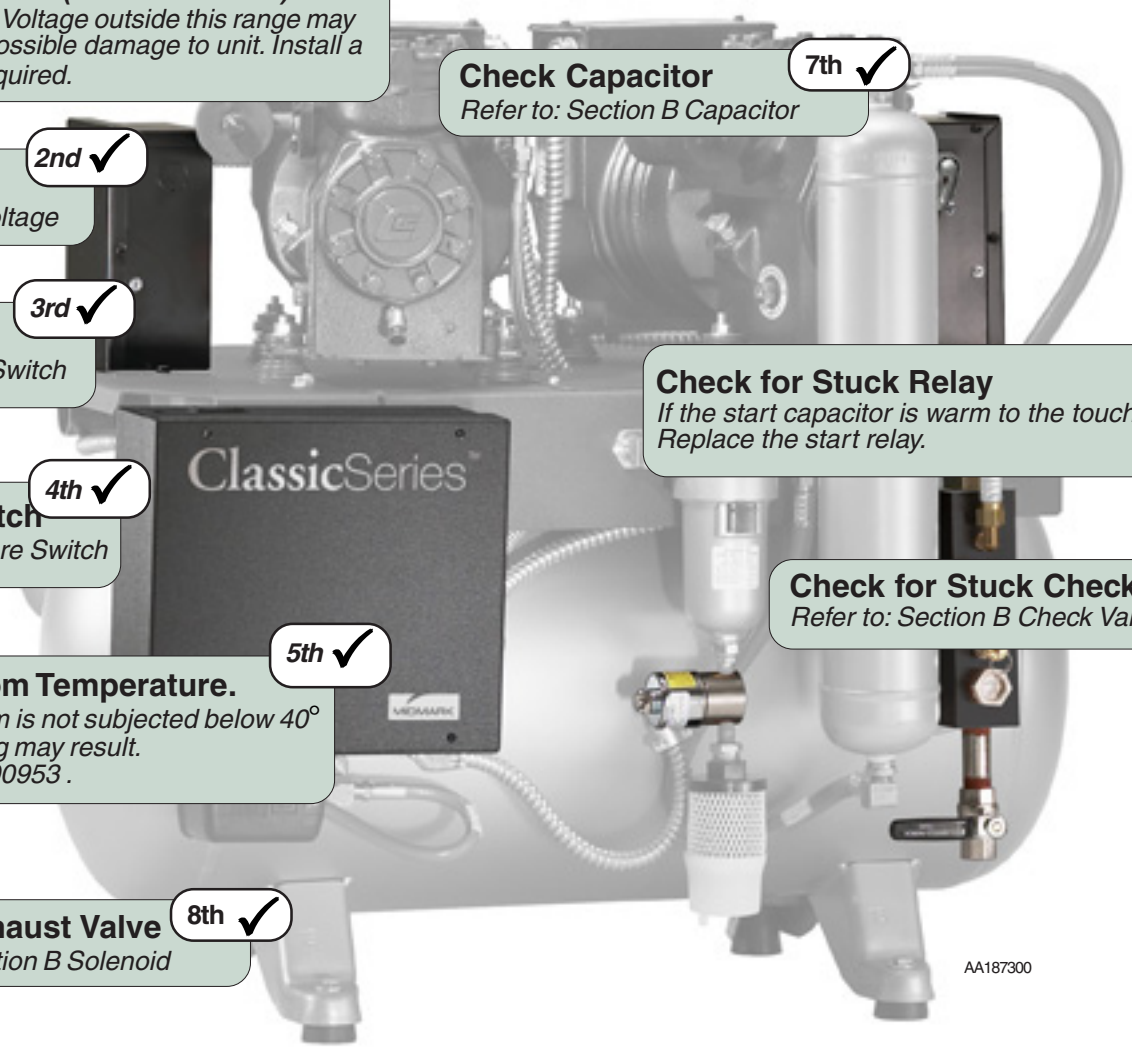
5th ✓ Check Ambient Room Temperature.
Verify temperature of room is not subjected below 40° Fahrenheit or hard starting may result. Use Midmark Oil, pn 77000953 .

7th ✓ Check Capacitor
Refer to: Section B Capacitor

6th ✓ Check for Stuck Relay
If the start capacitor is warm to the touch, start relay is not releasing. Replace the start relay.

9th ✓ Check for Stuck Check Valve
Refer to: Section B Check Valve

8th ✓ Check Exhaust Valve
Refer to: Section B Solenoid



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Models: *Serial Numbers:*	***CL21*** ***All***	***CL22*** ***All***	***CL32*** ***All***	***CL52*** ***All***

Compression & Purge Cycle

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Troubleshooting

Compression Cycle & Purge Cycle

Problem: *Motor runs Intermittently or "Chugs" -* ***PowerAir® - Oil Less Models***

Go To Page:

Refer To:	Page
Low Voltage	B-16
On/Off Switch	B-23
Pressure Switch	B-2

Check Voltage in Breaker
1st ✓

Note: If circuit breaker is tripped, measure voltage at the line side of the vacuum switch while the unit is running. Voltage should be in the range of ***208-230 (for 230 volt units) and 108-132 (for 120 volt units).*** *Voltage outside this range may result in failure to start and possible damage to unit. Install a buck/boost transformer as required.*

Check Low Voltage
2nd ✓

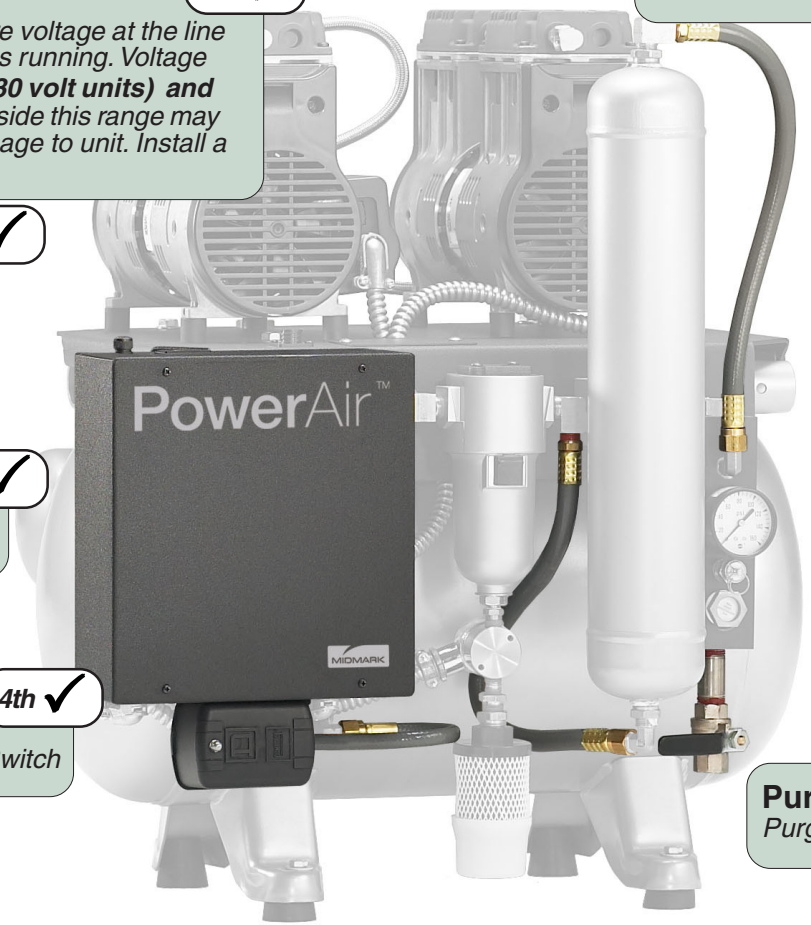
Refer to: Section B Low Voltage

Check On/Off Switch
3rd ✓

Refer to: Section B On/Off Switch

Check Pressure Switch
4th ✓

Refer to: Section B Pressure Switch



Check for Blockage in Air Line
6th ✓

Remove discharge hose from head and test run.
If unit runs correctly check for obstruction in air line to storage tank.
Obstruction will be at an orifice or other restriction.

Purge System
5th ✓

Purge system by pulling open the pressure relief valve.

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Troubleshooting

Compression Cycle - *continued*

Problem: *Compressor Heads run but will not Pressurize to 100 PSI*

Refer To:	Go To Page:
Solenoid	B-12
Pressure Switch	B-2
Coalescing Filter	B-11
Intake Filter	B-7
Checking for Leaks	B-10
Compressor Heads	B-29

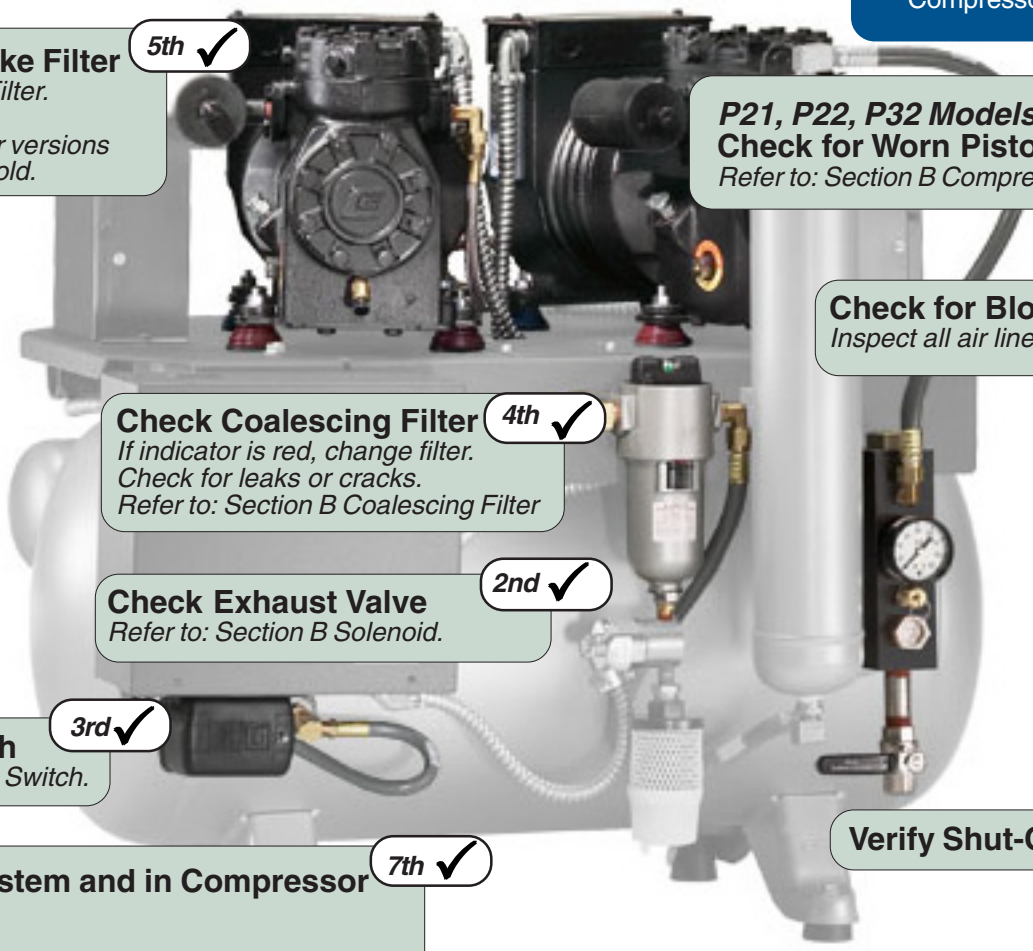
8th ✓

Lubricated Models Only
Check for Pressure Build Up
Remove discharge line, hold finger over fitting.
If low pressure build -up, head(s) are defective and need replaced.

5th ✓

Clean or Replace Intake Filter
Refer to: Section B Intake Filter.

Note: Intake filters on earlier versions are mounted on a "T" manifold.



9th ✓

P21, P22, P32 Models Only
Check for Worn Piston Cup
Refer to: Section B Compressor Heads

6th ✓

Check for Blockage in Air Line
Inspect all air lines for restrictions.

4th ✓

Check Coalescing Filter
If indicator is red, change filter.
Check for leaks or cracks.
Refer to: Section B Coalescing Filter

2nd ✓

Check Exhaust Valve
Refer to: Section B Solenoid.

3rd ✓

Check Pressure Switch
Refer to: Section B Pressure Switch.

1st ✓

Verify Shut-Off valve is Closed.

7th ✓

Check for leaks in Office Air System and in Compressor
- *Close the storage tank shut off.*
- *Pump up storage tank to 100 PSI.*
- *If pressure is maintained at 100 PSI for 15-20 minutes, leak is not in compressor.*

If pressure does not maintain, Refer to: Section B Checking for leaks.

Models: *All*
Serial Numbers:

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Troubleshooting

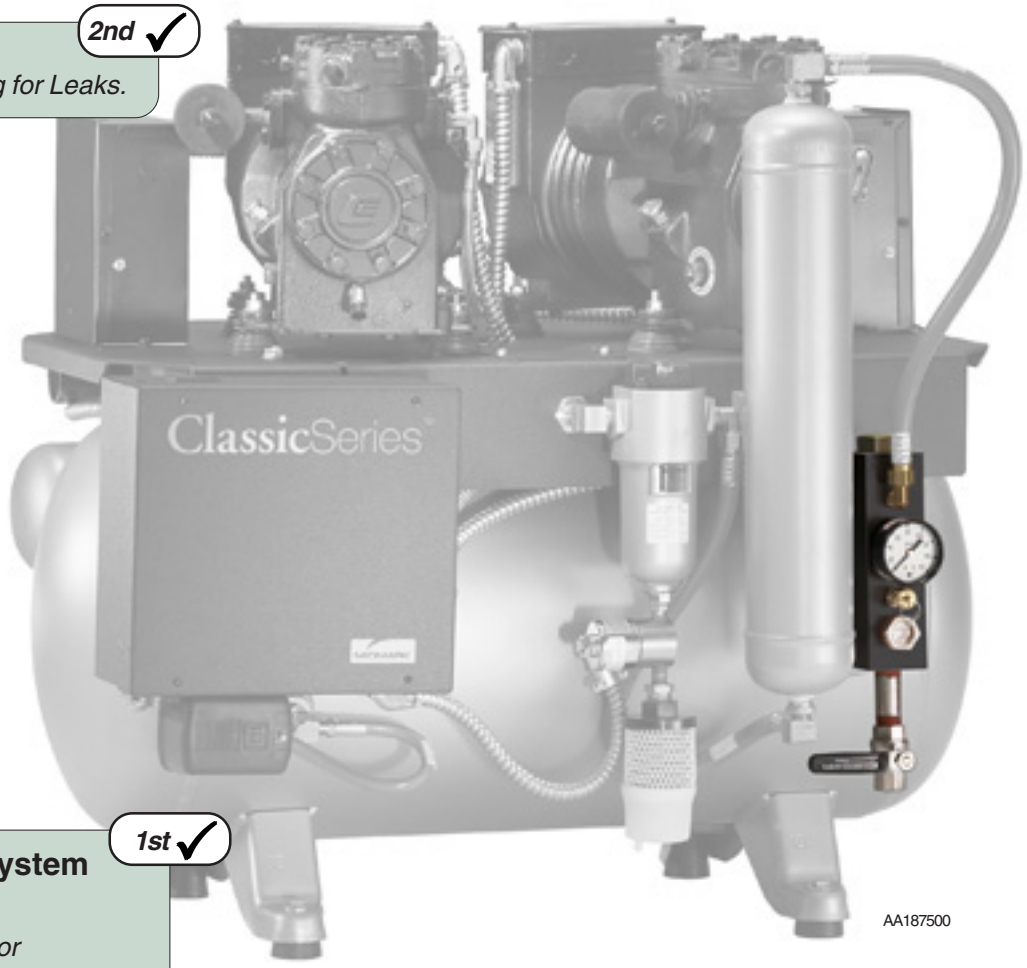
Compression Cycle - continued

Problem: *Compressor cycles with no air being used*

Refer To: **Go To Page:**

Checking for Leaks B-10

Check for Air Leaks *2nd* ✓
Refer to: Section B Checking for Leaks.



AA187500

Check for Leak in Office Air System *1st* ✓
Close the storage tank shut off.
•Pump up storage tank to 100 PSI.
•If pressure is maintained at 100 PSI for 15-20 minutes, leak is not in compressor.

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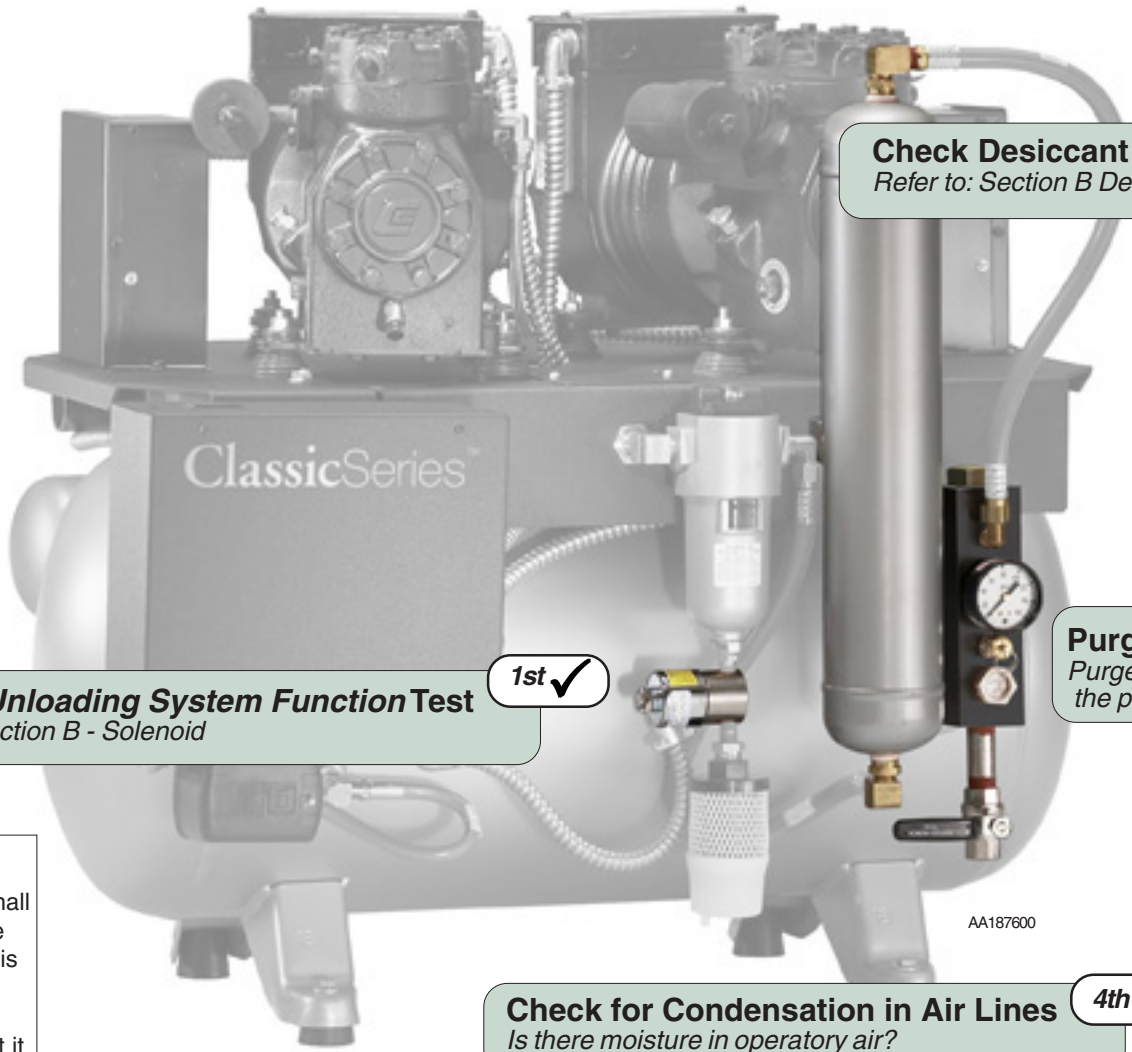
Compression Cycle & Purge Cycle- continued

Problem: *Moisture Indicator is Pink*

Refer To: — **Go To Page:**
Desiccant Tank B-15
Solenoid B-12
Compressor runs to frequently A-16

Is Compressor running too frequently? 3rd ✓
Refer to: Section A Compressor runs to Frequently.



Check Desiccant Drying Chamber 2nd ✓
Refer to: Section B Desiccant Tank

Purge System 5th ✓
Purge system by pulling open the pressure relief valve.

Perform *Unloading System Function* Test 1st ✓
Refer to: Section B - Solenoid

Check for Condensation in Air Lines 4th ✓
Is there moisture in operatory air?

Note:

Under normal operation conditions, a small amount of moisture with some oil may be under the unloader exhaust muffler. This is not a malfunction. It is evidence that the filter on the Desiccant Drying System captured the moisture, and did not permit it to enter the operatory air supply.

Models: ***All***
Serial Numbers:

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Troubleshooting

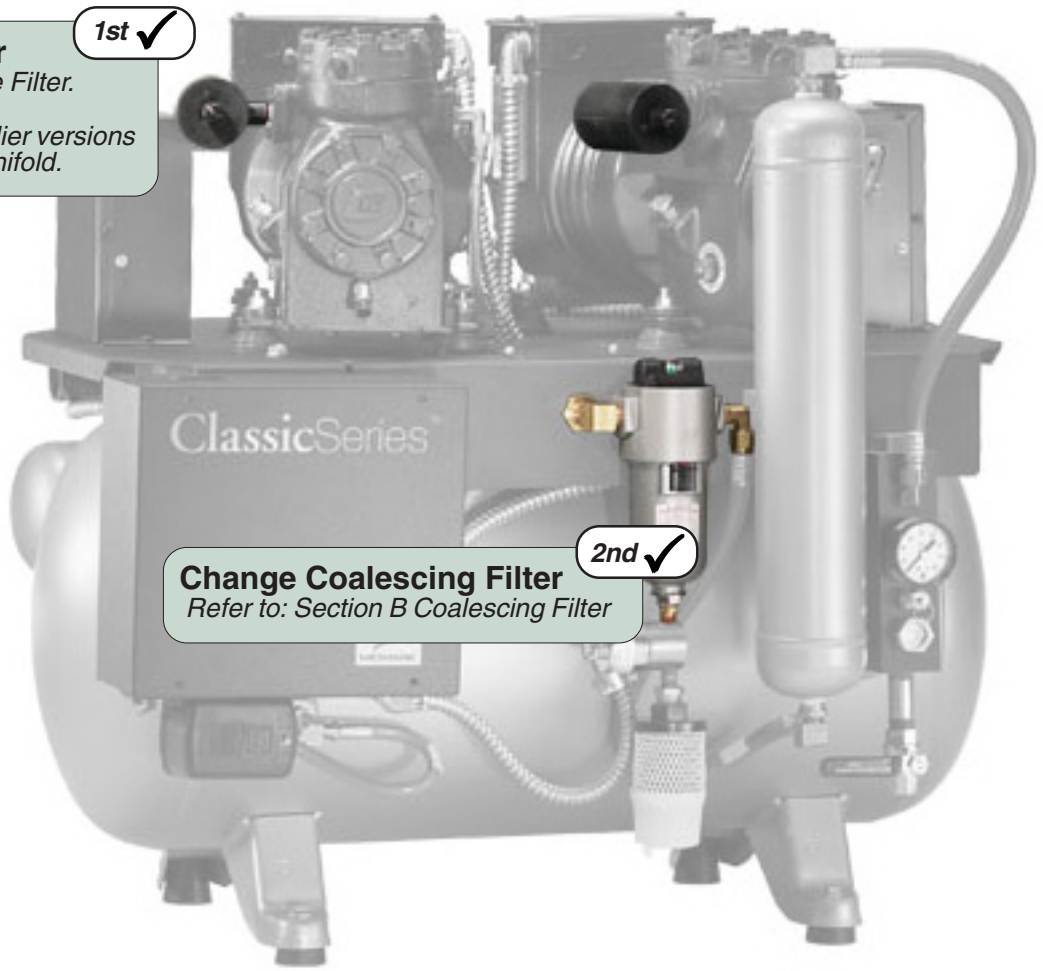
Compression Cycle & Purge Cycle- continued

Problem: *Element Indicator is Red*

Refer To: | **Go To Page:**
Intake Filter B-7
Coalescing Filter B-11

Change Intake Filter *1st* ✓
Refer to: Section B Intake Filter.

Note: Intake filters on earlier versions are mounted on a "T" manifold.



Change Coalescing Filter *2nd* ✓
Refer to: Section B Coalescing Filter

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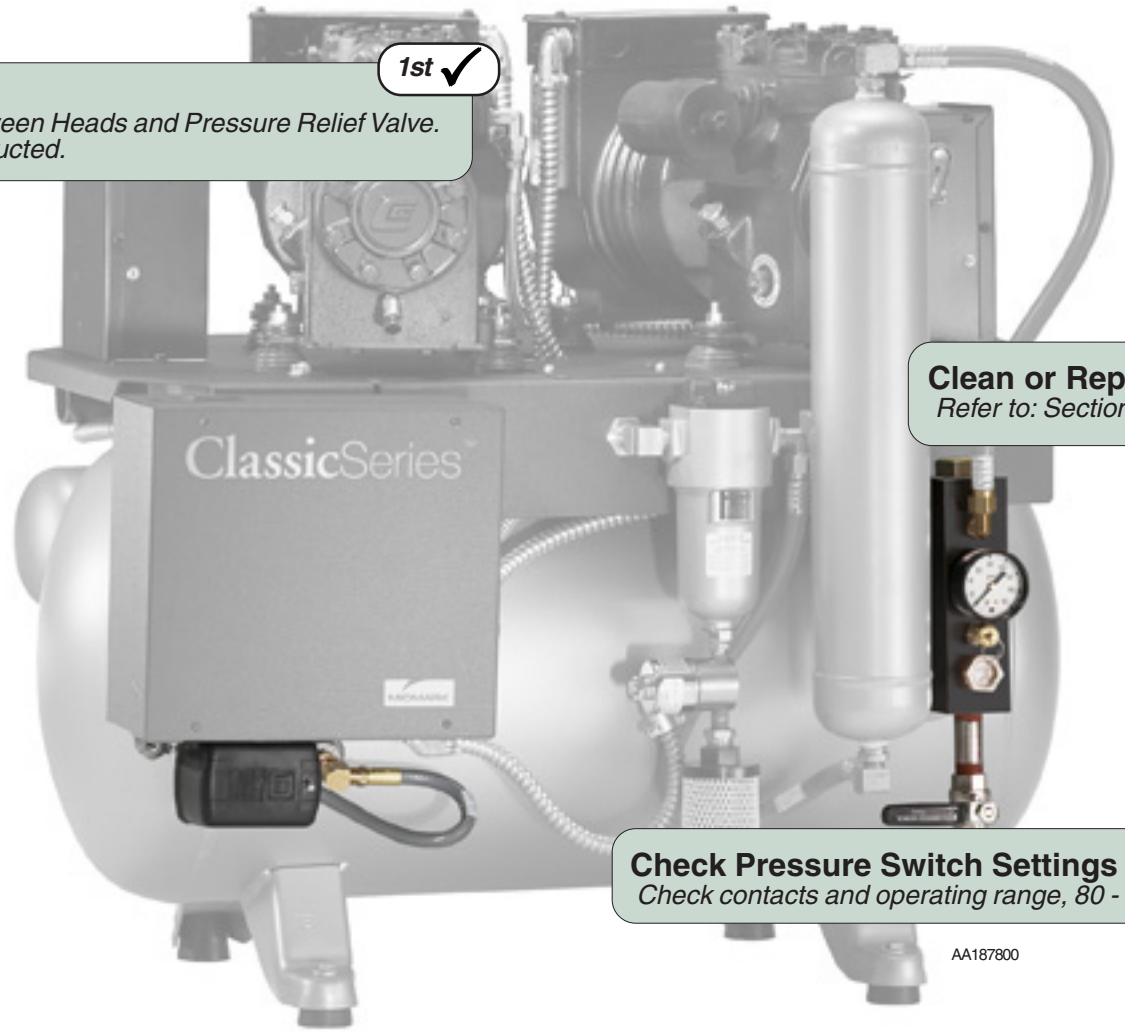
Troubleshooting

Compression Cycle & Purge Cycle- continued

Problem: *High Pressure*

Refer To: | **Go To Page:**
Check Valves B-21

Check Exhaust 1st ✓
Remove hoses one at a time between Heads and Pressure Relief Valve. Verify exhaust air flow is not obstructed.



Clean or Replace Check Valve 2nd ✓
Refer to: Section B Check Valve

Check Pressure Switch Settings 3rd ✓
Check contacts and operating range, 80 - 100 psi.

AA187800

Models: ***All***
Serial Numbers:

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Troubleshooting

Compression Cycle & Purge Cycle- continued

Problem: *Excessive Noise*

Refer To: | **Go To Page:**
Checking for Leaks B-10
Intake Filters B-7
Quiet Cover / Fans (Oil Less Models) ... B-38

Check for Leaky Hose 1st ✓
Refer to: Section B Checking for Leaks

Replace Intake Filters 2nd ✓
Refer to: Section B Intake Filters.

Note: Intake filters on earlier versions are mounted on a "T" manifold.

Oil-Less Compressors with Quiet Cover Only 3rd ✓
Check Fans
Refer to: Section B Fans

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Troubleshooting

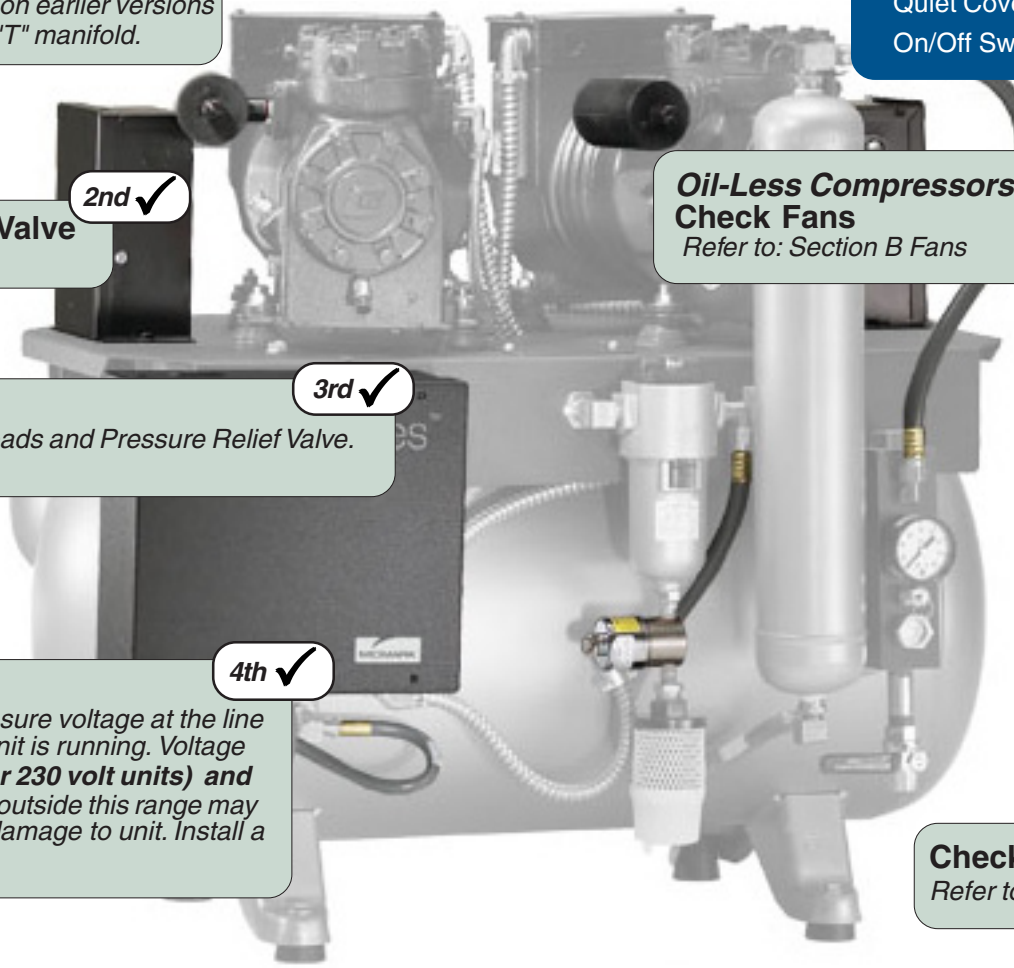
Compression Cycle & Purge Cycle- continued

Problem: *Overheating*

Refer To: — **Go To Page:**
Intake Filter B-7
Solenoid (Exhaust Valve) B-12
Pressure Switch B-2
Low Voltage B-16
Quiet Cover / Fans (Oil Less Models) ... B-38
On/Off Switch B-23

1st ✓ Clean Intake Filters
Refer to: Section B Intake Filters.

Note: Intake filters on earlier versions are mounted on a "T" manifold.



2nd ✓ Clean or Replace Exhaust Valve
Refer to: Section B Solenoid.

8th ✓ *Oil-Less Compressors with Quiet Cover Only*
Check Fans
Refer to: Section B Fans

3rd ✓ Check Exhaust
Remove hoses one at a time between Heads and Pressure Relief Valve. Verify exhaust air flow is not obstructed.

4th ✓ Check Voltage in Breaker
Note: If circuit breaker is tripped, measure voltage at the line side of the vacuum switch while the unit is running. Voltage should be in the range of ***208-230 (for 230 volt units) and 108-132 (for 120 volt units).*** *Voltage outside this range may result in failure to start and possible damage to unit. Install a buck/boost transformer as required.*

7th ✓ Check Pressure Switch
Refer to: Section B Pressure Switch

5th ✓ Check Low Voltage
Refer to: Section B Low Voltage

6th ✓ Check On/Off Switch
Refer to: Section B On/Off Switch

Models: ***All***
Serial Numbers:

Compression & Purge Cycle

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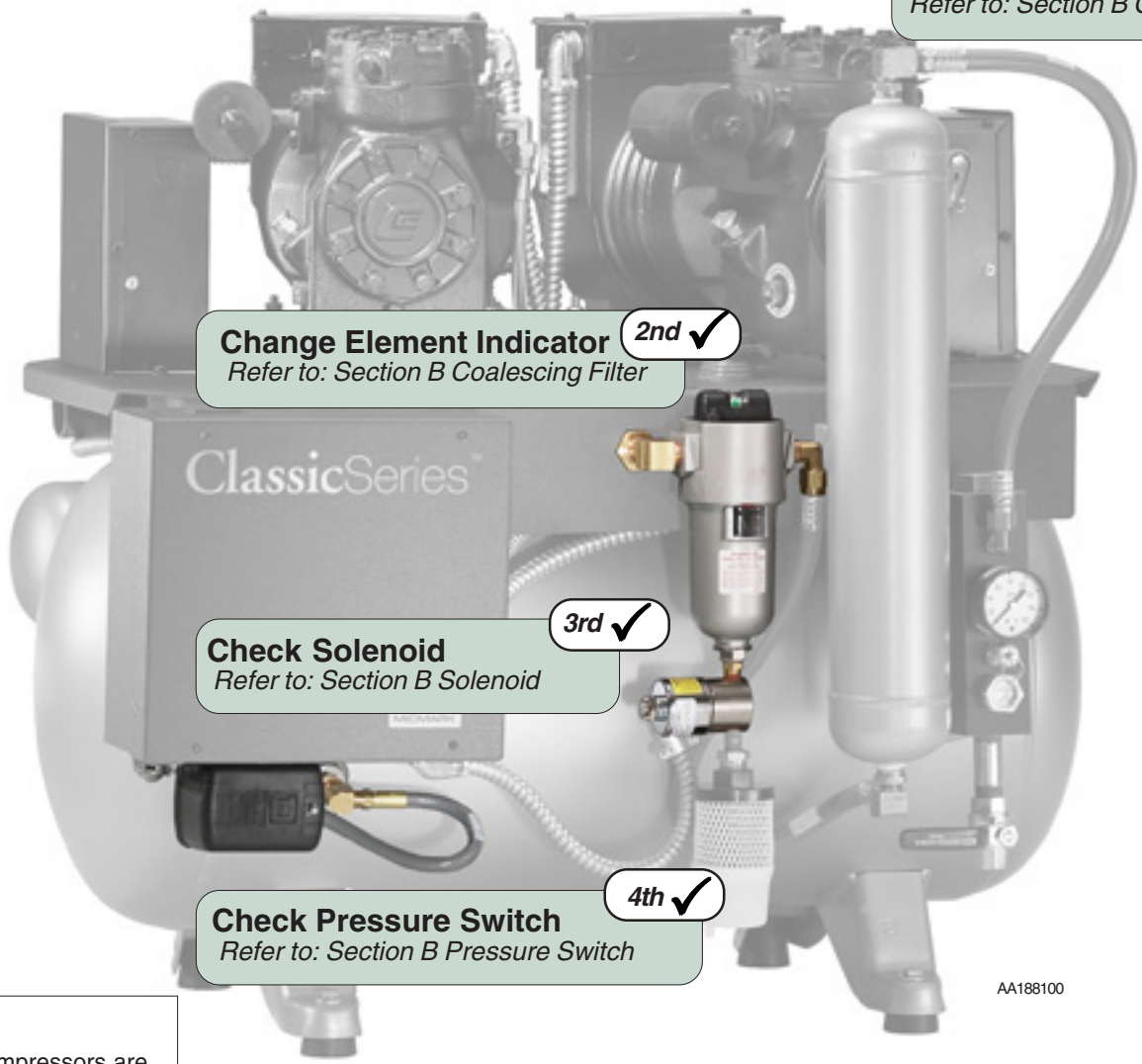
Troubleshooting

Compression Cycle & Purge Cycle- continued

Problem: *Compressor runs too Frequently*

Refer To:	Go To Page:
Solenoid	B-12
Pressure Switch	B-2
Coalescing Filter	B-11

Check for Air Leaks 1st ✓
Refer to: Section B Checking for Leaks



Change Element Indicator 2nd ✓
Refer to: Section B Coalescing Filter

Check Solenoid 3rd ✓
Refer to: Section B Solenoid

Check Pressure Switch 4th ✓
Refer to: Section B Pressure Switch

AA188100

Note:
More than the 35% duty cycle for Compressors are rated for would be "Running too Frequently".

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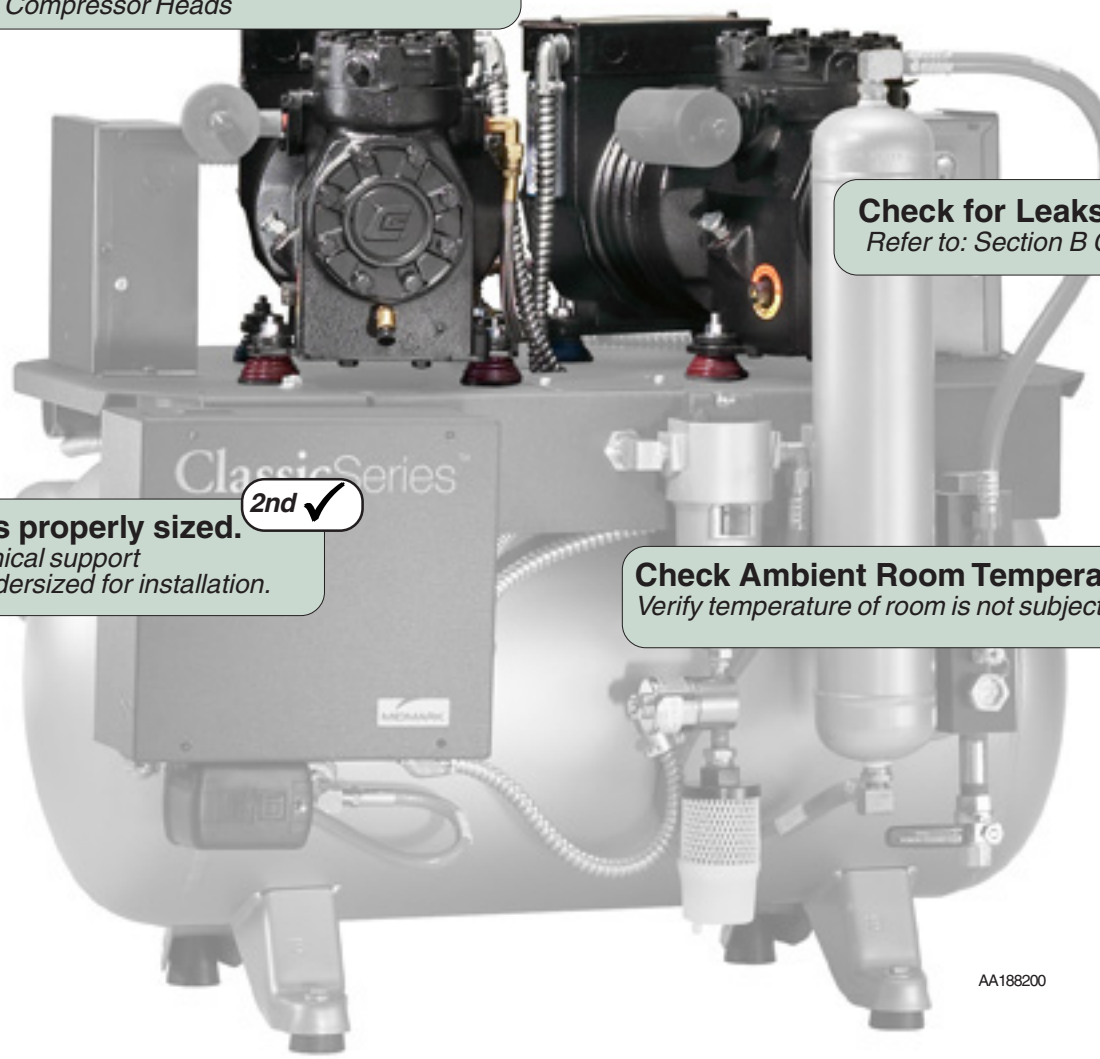
Troubleshooting

Compression Cycle & Purge Cycle

Problem: *Excessive Oil Use -* ***ClassicSeries® Lubricated Models***

Refer To: — **Go To Page:**
Checking for Leaks B-10
Compressor Heads B-29

1st ✓ Is Oil Black?
Black oil indicates a worn head. Replace compressor head(s).
Refer to: Section B Compressor Heads



2nd ✓ Verify Compressor is properly sized.
Check with Midmark Technical support
to verity compressor is undersized for installation.

3rd ✓ Check for Leaks
Refer to: Section B Checking for Leaks.

4th ✓ Check Ambient Room Temperature.
Verify temperature of room is not subjected above 100° Fahrenheit.

Models: *Serial Numbers:*	***CL21*** ***All***	***CL22*** ***All***	***CL32*** ***All***	***CL52*** ***All***

Compression & Purge Cycle

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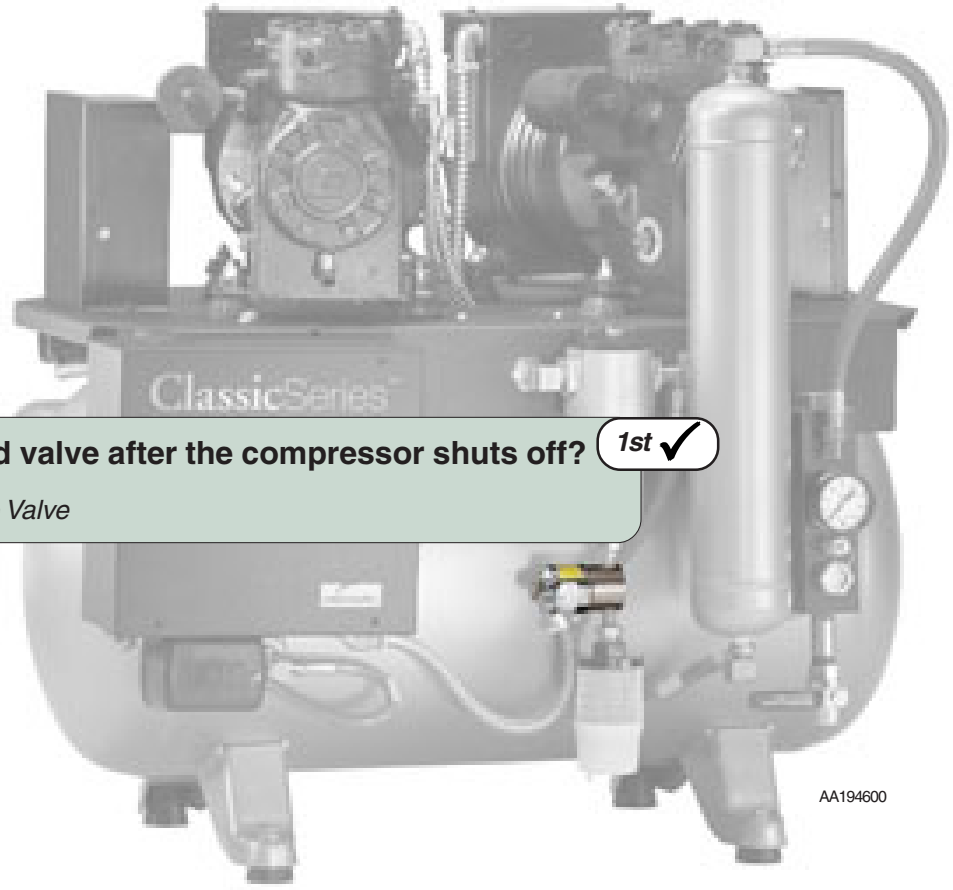
Troubleshooting

Refer To: | **Go To Page:**
Purge Valve B-34

Compression Cycle & Purge Cycle- continued

Problem: *Compressor Trips off the Circuit Breaker*



Do you hear air excaping from the solenoid valve after the compressor shuts off? *1st* ✓
If yes, check Solenoid.
If no, check purge valve for obstruction. Refer to: Purge Valve

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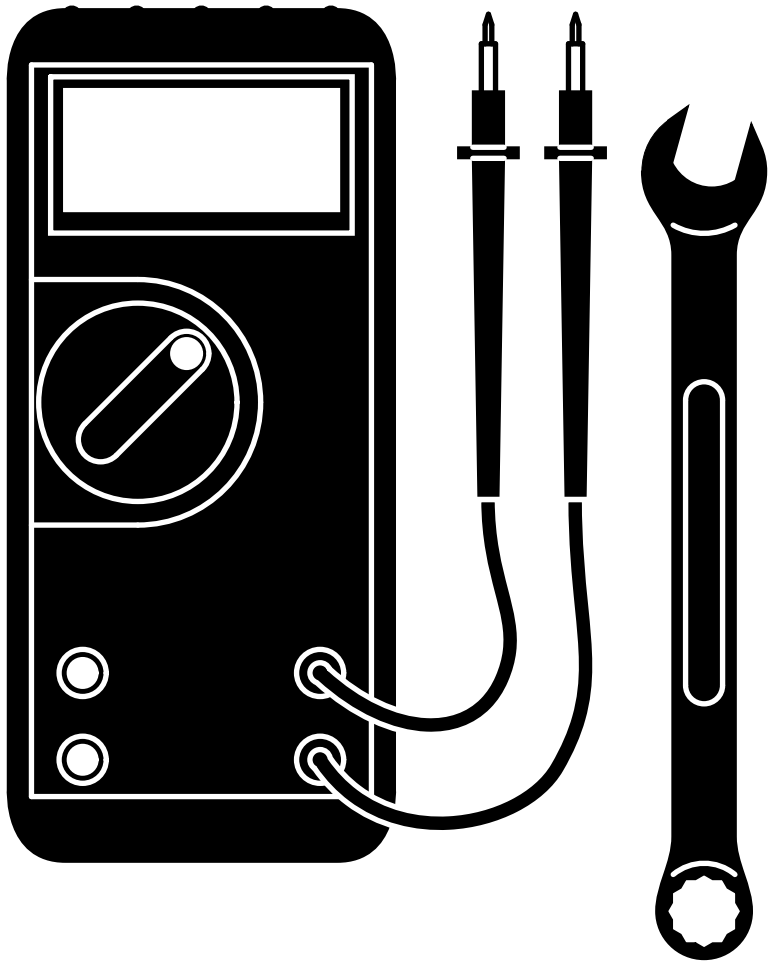
Section B

Testing & Repair



Components — Go To Page:

Pressure Switch B-2
Intake Filter B-8
Checking for Leaks B-11
Coalescing Filter B-12
Solenoid B-13
Desiccant Tank B-16
Low Voltage Control Circuit & Contactor B-18
Capacitor B-20
Check Valve B-22
ON/OFF Switches B-24
Fuse B-26
Start Relay (Lubricated Models Only) .. B-28
Compressor Heads *(Listed by Model)*
CL21, CL22, CL32 and CL52 ..... B-30
P21, P22 and P32 ..... B-32
P52 and P72 ..... B-33
Purge Valve B-35
Thermal Overload Switch B-37
Fan (Oil Less Models with Quiet Cover) B-39

Click GO TO PAGE: button (then enter desired page number) to view any page in this document.

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Testing & Repair

Pressure Switch

Location and Function

During the Compression Cycle...

When the storage tank is filled to the preset pressure the pressure switch will open and stop the compressor.

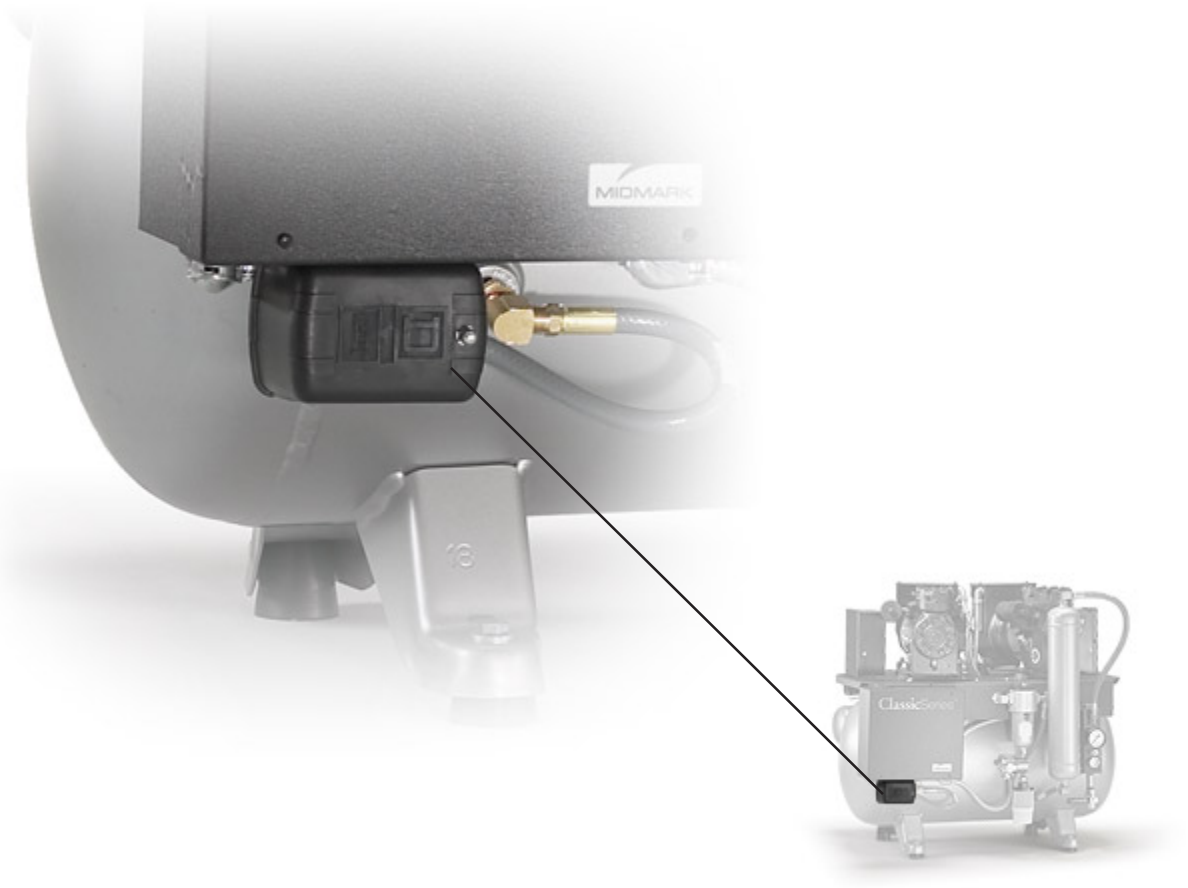
During the Purge Cycle...

The pressure switch shuts off current to the compressor head(s) and the solenoid / purge valve.
A mechanical valve on the pressure switch opens up to unload the compressor headlines. At the same time the solenoid opens, starting the purge cycle.

Cut-In / Cut-Out time

Cut-In / Cut-Out is the minimum and maximum discharge pressures at which the compressor will switch from unload to load operation (cut-in) or from load to unload (cut-out). The pressure switch controls Cut-In / Cut-Out times.

Refer to: — **Go To Page:**
Testing B-3
Adjustment B-5
Wiring Diagrams D-1
Exploded views E-1



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Pressure Switch - *continued*

*Testing - ***Note - This procedure is only for units with Serial Numbers listed below. Refer to following pages for other Serial Number listings.***

Refer to: **Go To Page:**
Adjustment B-5
Access Procedures C-1

Step 1: Perform Adjustment.
Refer to Section B Pressure Switch Adjustment.

Step 2: Turn power off.

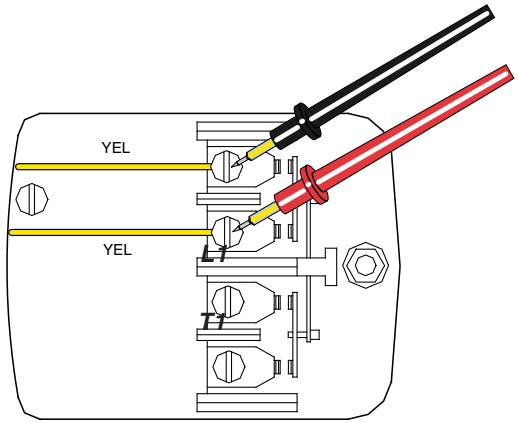
Step 3: Remove pressure switch cover and verify there are no black/burnt melted wires. If there are replace pressure switch.
Refer to Section C Pressure Switch Cover

Step 4: Turn power on.

Caution
When testing components with power on use care to prevent electrical shock.

Step 5: Set meter to $\tilde{V}$.

AA185100



Step 6: Place meter probes on both yellow wires.

Meter Reading	*Status*	*Required Action*
No Pressure on Gauge Less than 24 Volts on Reading		Replace Pressure Switch.
24 Volt Reading		Pressure Switch - OK

Attention:
Test Pressure Switch during purge cycle. During compression cycle Pressure Switch is closed and has no voltage.

Models: / ***Serial Numbers:***				
CL21 *0701L210001 thru 0901L210370*	***CL22*** *0701L220001 thru 0903L220294*	***CL32*** *0701L320001 thru 0901L320807*	***CL52*** *0701L520001 thru 0810CL520124*	
P21 *0703P210001 thru 0903P210361*	***P22*** *0703P220001 thru 0903P221139*	***P32*** *0703P210001 thru 0903P321137*	***P52*** *0703P210001 thru 0902P520467*	***P72*** *0703P210001 thru 0903P720190*

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Testing & Repair

Pressure Switch - *continued*

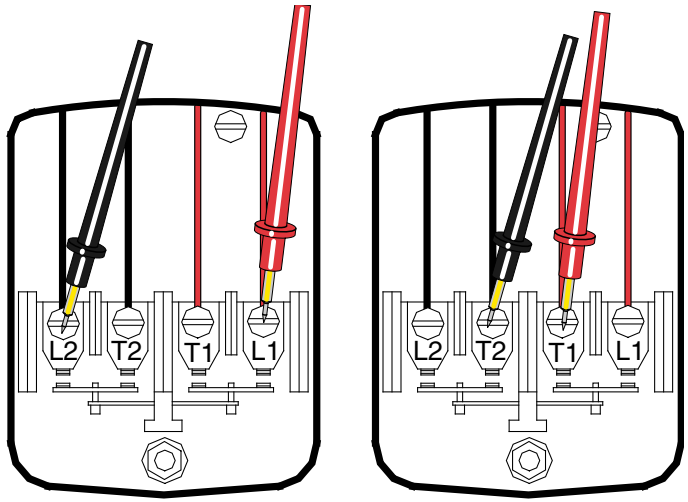
Testing ***Note - This procedure is only for units with Serial Numbers listed below.***

Refer To: — **Go To Page:**
Function and Location B-2
Adjustment B-6
Access Procedures C-1
Wire Diagrams D-1
Exploded Views E-1

Step 1: Perform Adjustment.
Refer to Section B Vacuum Switch Adjustment.

Step 2: Turn power off.

Step 3: Remove vacuum switch cover and verify there are no black/burnt melted wires. If there are replace pressure switch.
Refer to Section C Vacuum Switch Cover



Step 4: Turn power on.

WARNING
High Voltage. When testing components with power on use care to prevent electrical shock.

Step 5: Set meter to $\tilde{V}$.

AA185101

Step 6:
- Bleed tank pressure down to less than 80 PSI.
- Pressure switch will make an audible click.
- Check line voltage across L1 and L2.
- Check line voltage across T1 and T2.
- These voltages should be the same.

Meter Reading	*Status*	*Required Action*
Voltage Not Equal		Replace Pressure Switch.
T1 & T2 Voltage = L1 & L2 Voltage		Pressure Switch - OK

Models: ***Serial Numbers:***	***CL21*** *0902L210372 thru Present*	***CL22*** *0903L220296 thru Present*	***CL32*** *0901L320813 thru Present*	***CL52*** *0810L520126 thru Present*	***All*** *V785000 thru Present*
Models: ***Serial Numbers:***	***P21*** *0904P210365 thru Present*	***P22*** *0904P221146 thru Present*	***P32*** *0904P321145 thru Present*	***P52*** *0904P520474 thru Present*	***P72*** *0903P720191 thru Present*

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Pressure Switch - *continued*

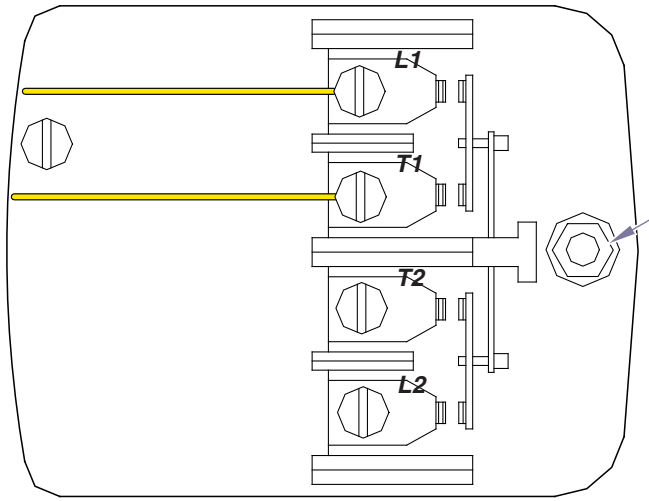
*Adjustment - ***Note - This procedure is only for units with Serial Numbers listed below. Refer to following pages for other Serial Number listings.***

Refer To: **Go To Page:**
Function and Location B-2
Testing B-3
Access Procedures C-1
Wire Diagrams D-1
Exploded Views E-1

Cut-In Adjustment

Step 1: Run compressor until pressure reaches 100 lbs.

Note: Compressor should shut off close to 100 lbs.



AA185200

Step 2: If compressor didn't shut down at 100 lbs, turn nut on adjuster to reset gauge.

- Clockwise will increase reading.
- Counter Clockwise will decrease reading.

Models:	**CL21**	**CL22**	**CL32**	**CL52**
Serial Numbers:	0701L210001 thru 0901L210370	0701L220001 thru 0903L220294	0701L320001 thru 0901L320807	0701L520001 thru 0810CL520124

Models:	**P21**	**P22**	**P32**	**P52**	**P72**
Serial Numbers:	0703P210001 thru 0903P210361	0703P220001 thru 0903P221139	0703P210001 thru 0903P321137	0703P210001 thru 0902P520467	0703P210001 thru 0903P720190

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Testing & Repair

Pressure Switch - *continued*

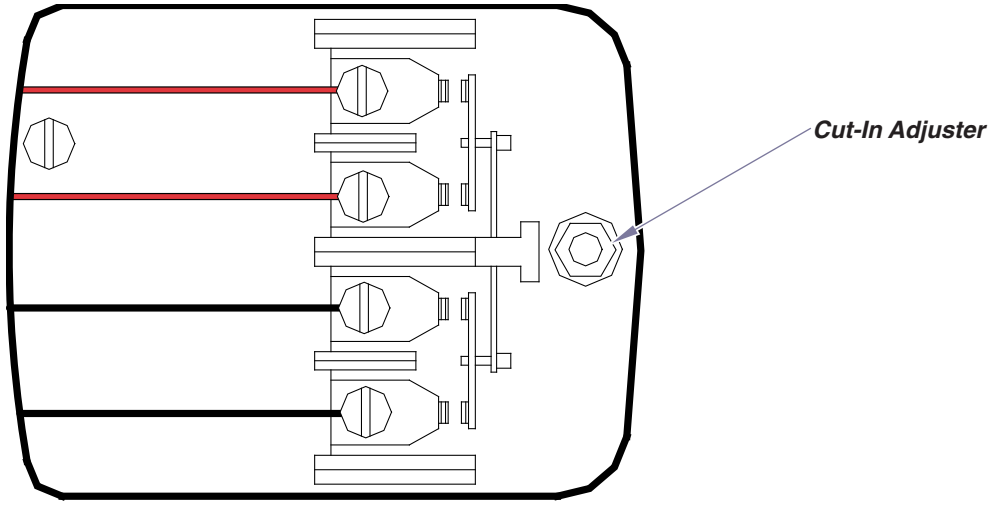
*Adjustment - ***Note - This procedure is only for units with Serial Numbers listed below. Refer to following pages for other Serial Number listings.***

Refer To: **Go To Page:**
Function and Location B-2
Testing B-4
Access Procedures C-1
Wire Diagrams D-1
Exploded Views E-1

Cut-In Adjustment

Step 1: Run compressor until pressure reaches 100 lbs.

Note: Compressor should shut off close to 100 lbs.



AA185201

Step 2: If compressor didn't shut down at 100 lbs, turn nut on adjuster to reset gauge.

- Clockwise will increase reading.
- Counter Clockwise will decrease reading.

Models:	**CL21**	**CL22**	**CL32**	**CL52**	**All**
Serial Numbers:	0902L210372 thru Present	0903L220296 thru Present	0901L320813 thru Present	0810L520126 thru Present	V785000 thru Present

Models:	**P21**	**P22**	**P32**	**P52**	
Serial Numbers:	0904P210365 thru Present	0904P221146 thru Present	0904P321145 thru Present	0904P520474 thru Present	

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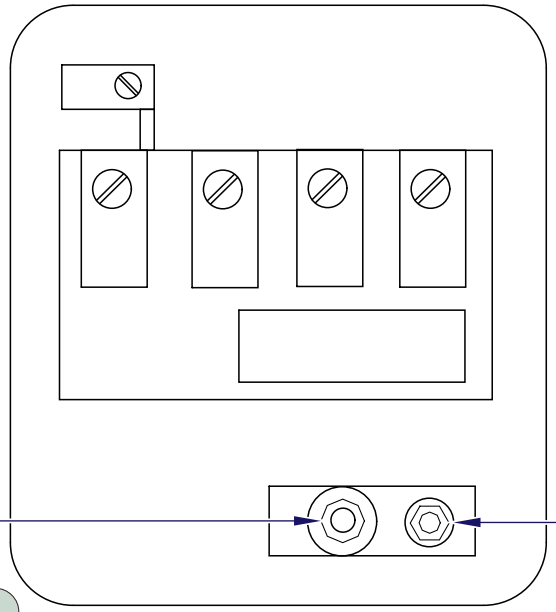
Testing & Repair

Refer To: **Go To Page:**
Function and Location B-2
Testing B-4
Access Procedures C-1
Wire Diagrams D-1
Exploded Views E-1

Cut-In Adjustment

Step 1: Run compressor until pressure reaches 100 lbs.

Note: Compressor should shut off close to 100 lbs.



Step 2: If compressor didn't shut down at 100 lbs, turn nut on adjuster to reset gauge.

•Clockwise will increase reading.
•Counter Clockwise will decrease reading.

Cut-Out Adjustment

Step 1: Run compressor until pressure reaches 100 lbs.

Note: Compressor should shut off close to 100 lbs. If not perform a Cut-In adjustment

Step 2: Compressor should start back up after a 20 lb drop on the gauge. If needed, turn nut to adjust.

•Clockwise will increase reading.
•Counter Clockwise will decrease reading.

NOTE: Pressure Switches on models up to 2 HP have a Preset Cut-In adjuster. Models 2HP and over have Manual adjuster for Cut-In setting. Both Models have Manual Cut-Out Adjusters.

Models: / ***Serial Numbers:***	***P72*** *0903P720191 thru Present*	***P72*** *V785000 thru Present*

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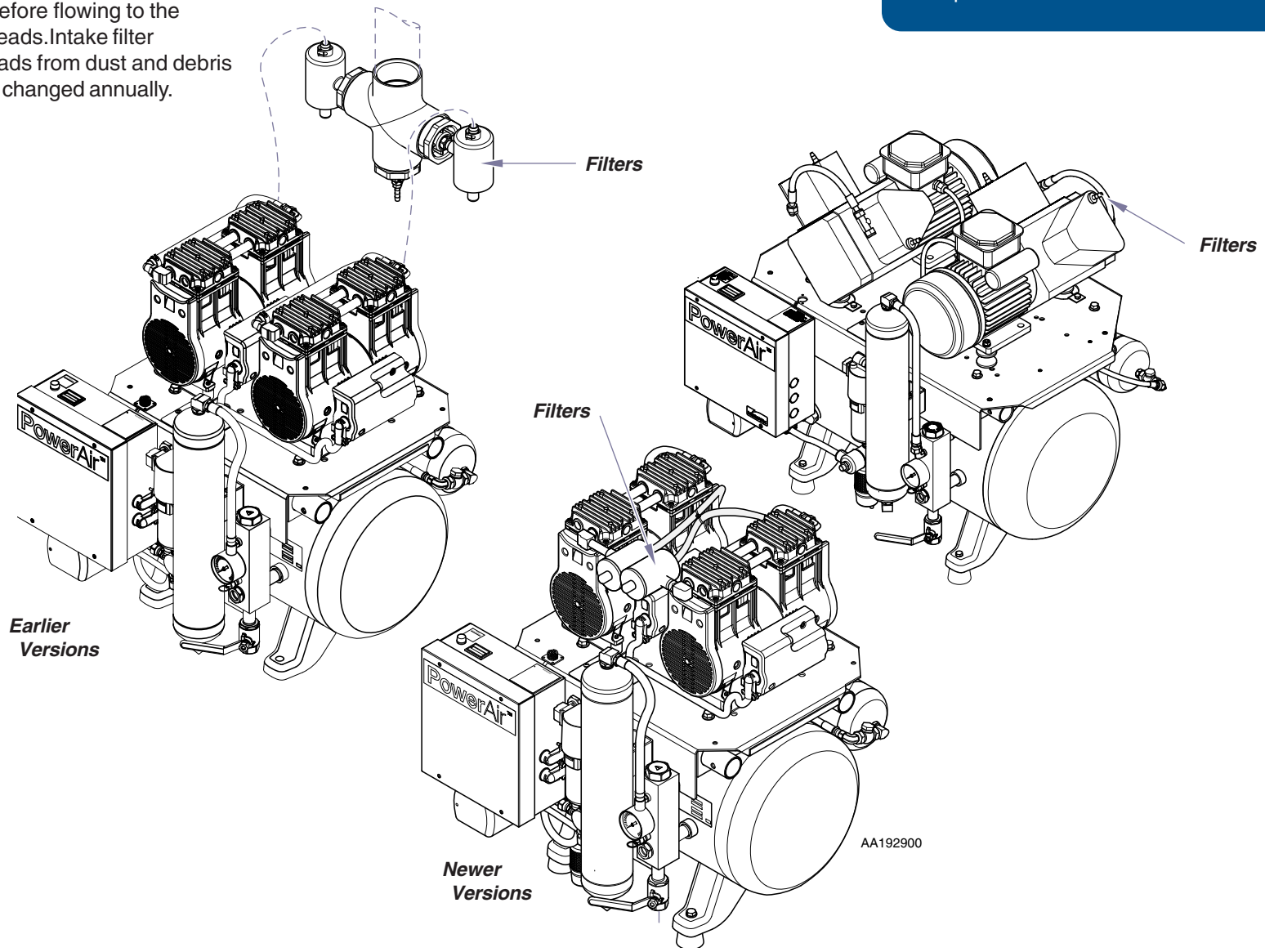
Testing & Repair

Intake Filters

Intake Filters *Go To Page:*
Clean (Rock and Lubricated Heads) B-9
Clean (Cattani Heads) B-10
Exploded Views E-1

Function and Location

Atmospheric air is drawn in through intake filters before flowing to the compressor heads.Intake filter protect the heads from dust and debris and should be changed annually.



Intake Filter

Models: ***All***
Serial Numbers:

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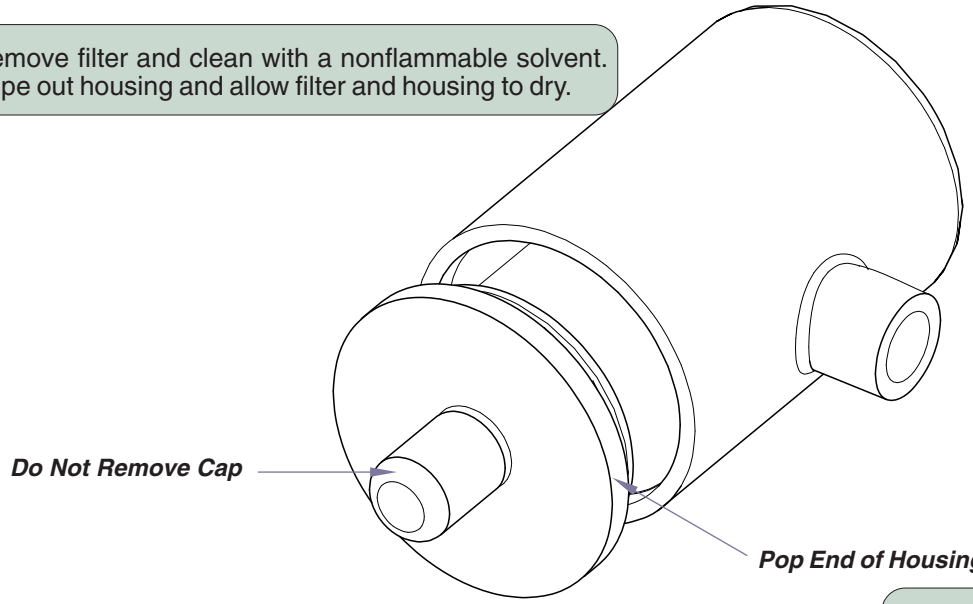
Intake Filter

Clean

Step 1: Remove exhaust hose from filter housing. Unscrew intake filter from intake manifold assembly or compressor head.

Step 3: Remove filter and clean with a nonflammable solvent. Wipe out housing and allow filter and housing to dry.



Step 5: Screw onto intake manifold assembly. Install exhaust hose onto filter housing.

Step 2: Pop off one side of filter housing.

Step 4: Install filter back into housing. Assemble housing.

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Testing & Repair

Intake Filter

Clean

Step 1: Firmly grab black boot, twist, rock and pull outward.

Step 2: Remove filter from boot.

Step 3: Blow off dust and dirt with a compressor.

Step 4: Push boot flange evenly onto filter.

Step 5: Reinstall boot in compressors head and firmly press around boot flange to secure in place.

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Checking for Leaks

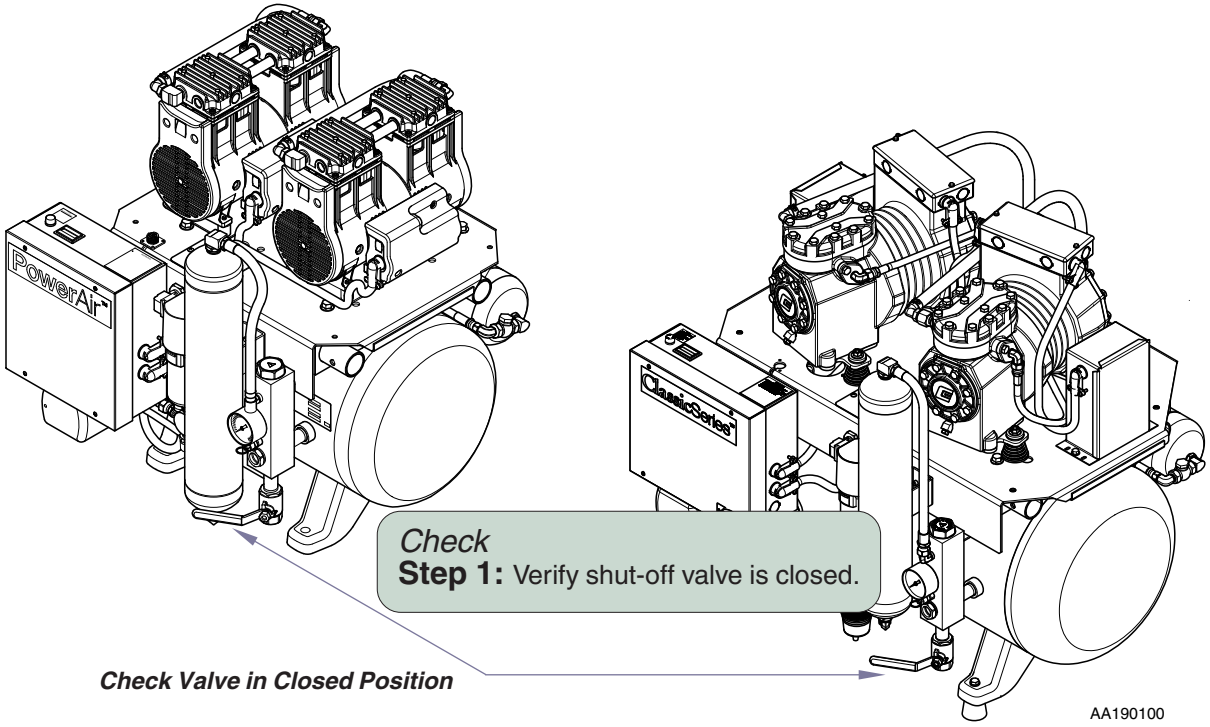
Check
Step 2: Turn power on.

Note: *Compressor should run quietly and storage tank will begin to pressurize.*

Caution

Avoid water contact with electrical parts.

Step 3: Use soapy water to check for compressor plumbing joint leaks.



Check
Step 1: Verify shut-off valve is closed.

Check Valve in Closed Position

AA190100

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Testing & Repair

Coalescing Filter

Function and Location

The Coalescing Filter removes water, oil and other contaminates from compressed air. Coalesced liquids gravitate into the sump bowl where they are discharged through the drain.

On the ClassicSeries® Lubricated models, the filter needs replaced biannually, or every 350 hrs, based on 2000 hour work year times 35 percent duty cycle.

On the PowerAir® Oil-Less models, the filter needs replaced annually, or every 700 hrs, based on 2000 hour work year times 35 percent duty cycle.

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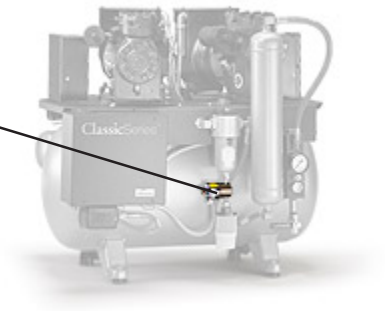
Solenoid

Refer to: **Go To Page:**
Testing B-14
Wiring Diagrams D-1
Exploded views E-1

Function and Location

During the compression cycle...
The normally open Solenoid Valve, closes, preventing the compressed air from being discharged to the drain.

During the purge cycle...
Power is removed from the Normally Open Solenoid Valve, Opening the valve, allowing pressure to be released from the top of the compressor head to the drain.
It also allows the Purge Tank to release its pressure thru the Desiccant Tank to the drain, regenerating the desiccant drying system.



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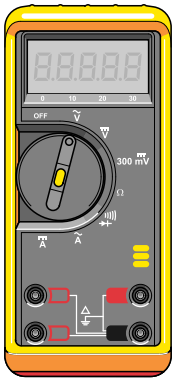
Testing & Repair

Solenoid

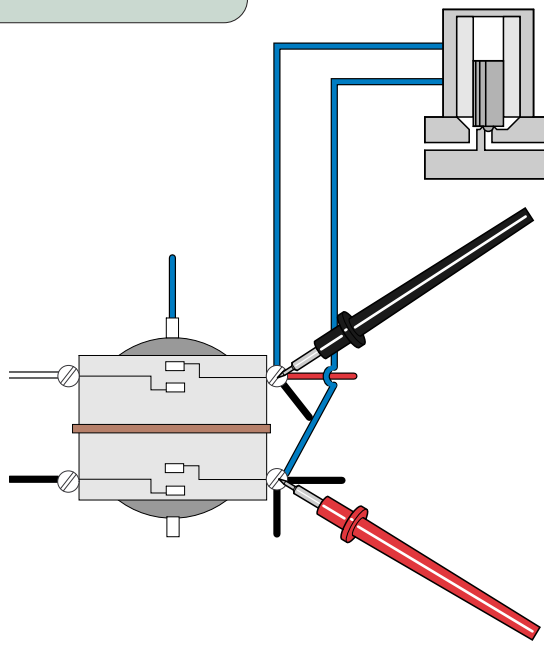
*Testing - ***Note - This procedure is only for units with Serial Numbers listed below. Refer to following pages for other Serial Number listings.***

Refer to: — **Go To Page:**
Access Procedures C-1
Wiring Diagrams D-1
Exploded views E-1

Step 1: Remove electrical box cover. *Refer to Section C Electrical Box Cover*

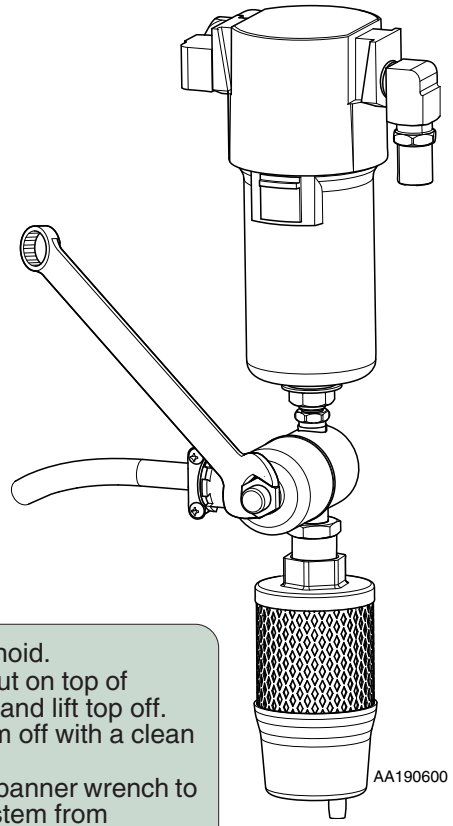


Step 2: Set meter to Ṽ.



Step 3: Place meter probes on contactor solenoid wire connections.

Caution
When testing components with power on use care to prevent electrical shock.



Step 4: Clean solenoid.
- Loosen nut on top of solenoid and lift top off.
- Wipe stem off with a clean rag.
- Using a spanner wrench to remove stem from valve body. *(If spanner wrench not available use standard wrench very carefully)*
- Clean internal valve plunger, ports and seat.
- Reassemble.

Meter Reading	Status	Required Action
Less than 230 Volts on 230 Volt units. Less than 115 Volts on 115 Volt units. Doesn't work after cleaning.		Replace Solenoid
230 Volt Reading on 230 Volt units. 115 Volt Reading on 115 Volt units. Works after Cleaning.		Solenoid - OK

Models:	**CL21**	**CL22**	**CL32**	**CL52**	
Serial Numbers:	0701L210001 thru 0901L210370	0701L220001 thru 0903L220294	0701L320001 thru 0901L320807	0701L520001 thru 0810CL520124	
Models:	**P21**	**P22**	**P32**	**P52**	**P72**
Serial Numbers:	0703P210001 thru 0903P210361	0703P220001 thru 0903P221139	0703P210001 thru 0903P321137	0703P210001 thru 0902P520467	0703P210001 thru 0903P720190

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Testing & Repair

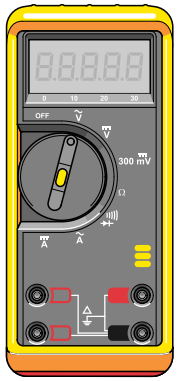
Solenoid

*Testing - ***Note - This procedure is only for units with Serial Numbers listed below.***

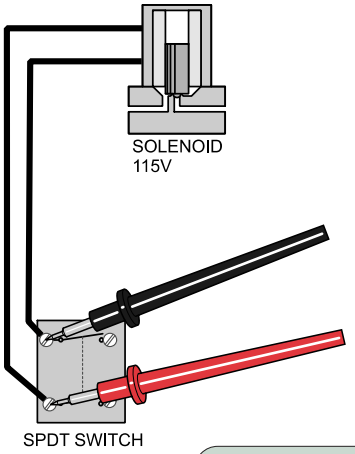
Refer to: | **Go To Page:**
Access Procedures C-1
Wiring Diagrams D-1
Exploded views E-1

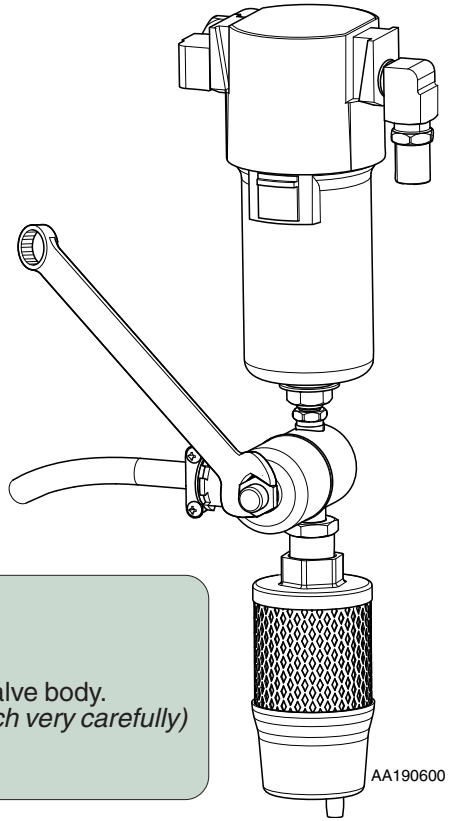
Step 1: Remove electrical box cover.
Refer to Section C Electrical Box Cover

Step 2: Set meter to ⎓V.



Step 3:
- Check if line voltage is present at solenoid wires (115 or 230 VAC).
- If you have voltage, then shut power off and clean solenoid.
- If solenoid still doesnt work after cleaning, replace.





To Clean Solenoid...

A.) Loosen nut on top of solenoid and lift top off.
B.) Wipe stem off with a clean rag.
C.) Using a spanner wrench to remove stem from valve body.
(If spanner wrench not available use standard wrench very carefully)
D.) Clean internal valve plunger, ports and seat.
E.) Reassemble.

Models:	**CL21**	**CL22**	**CL32**	**CL52**	
Serial Numbers:	0902L210372 thru Present	0903L220296 thru Present	0901L320813 thru Present	0810L520126 thru Present	
Models:	**P21**	**P22**	**P32**	**P52**	**P72**
Serial Numbers:	0904P210365 thru Present	0904P221146 thru Present	0904P321145 thru Present	0904P520474 thru Present	0903P720191 thru Present

All
V785000 thru Present

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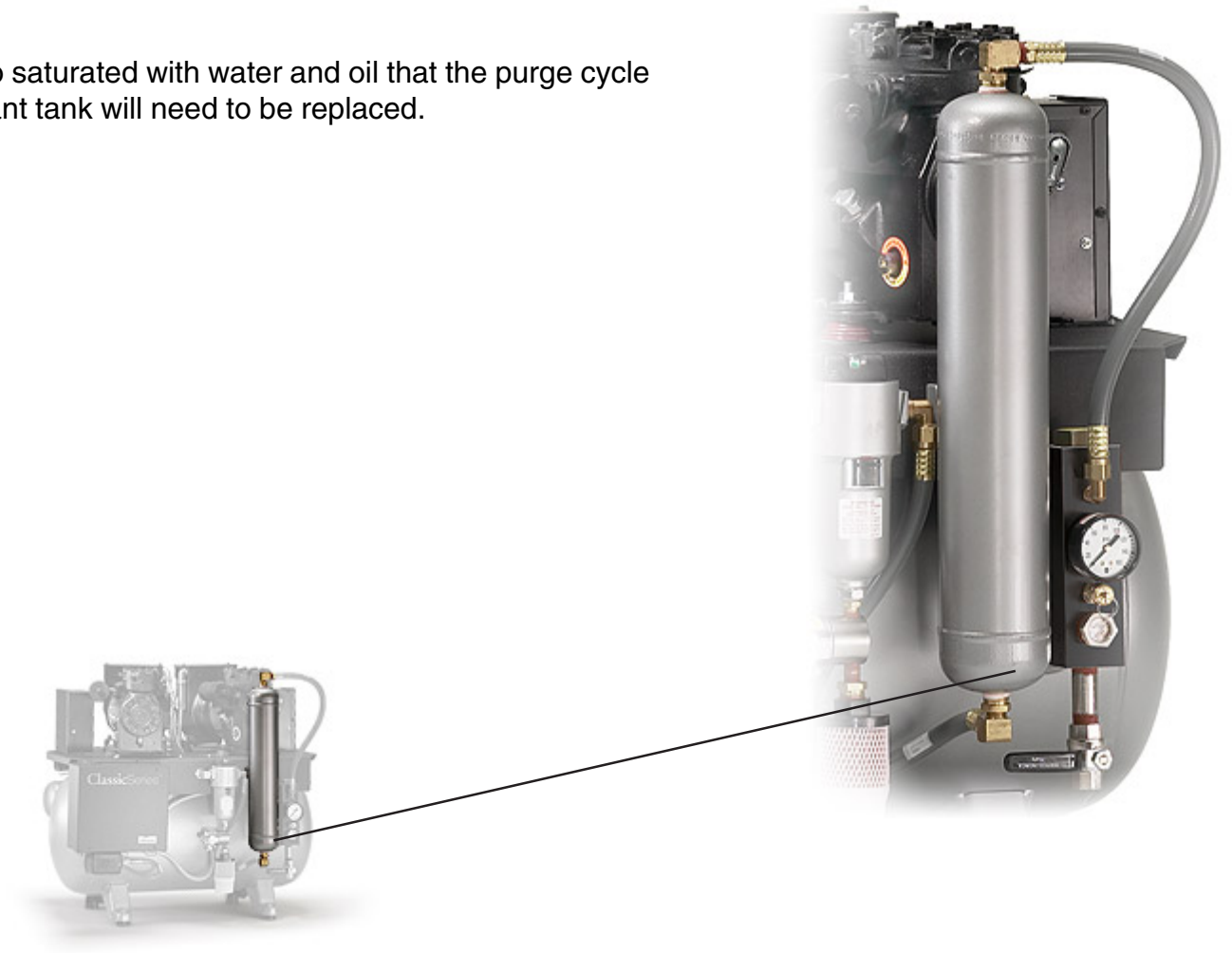
Testing & Repair

Desiccant Tank

Function and Location

Moisture vapor drying takes place as the air is directed through the silica and alumina gel (desiccant material) from bottom to top in the drying chamber of the desiccant tank.

When the desiccant becomes so saturated with water and oil that the purge cycle fails to regenerate it, the desiccant tank will need to be replaced.



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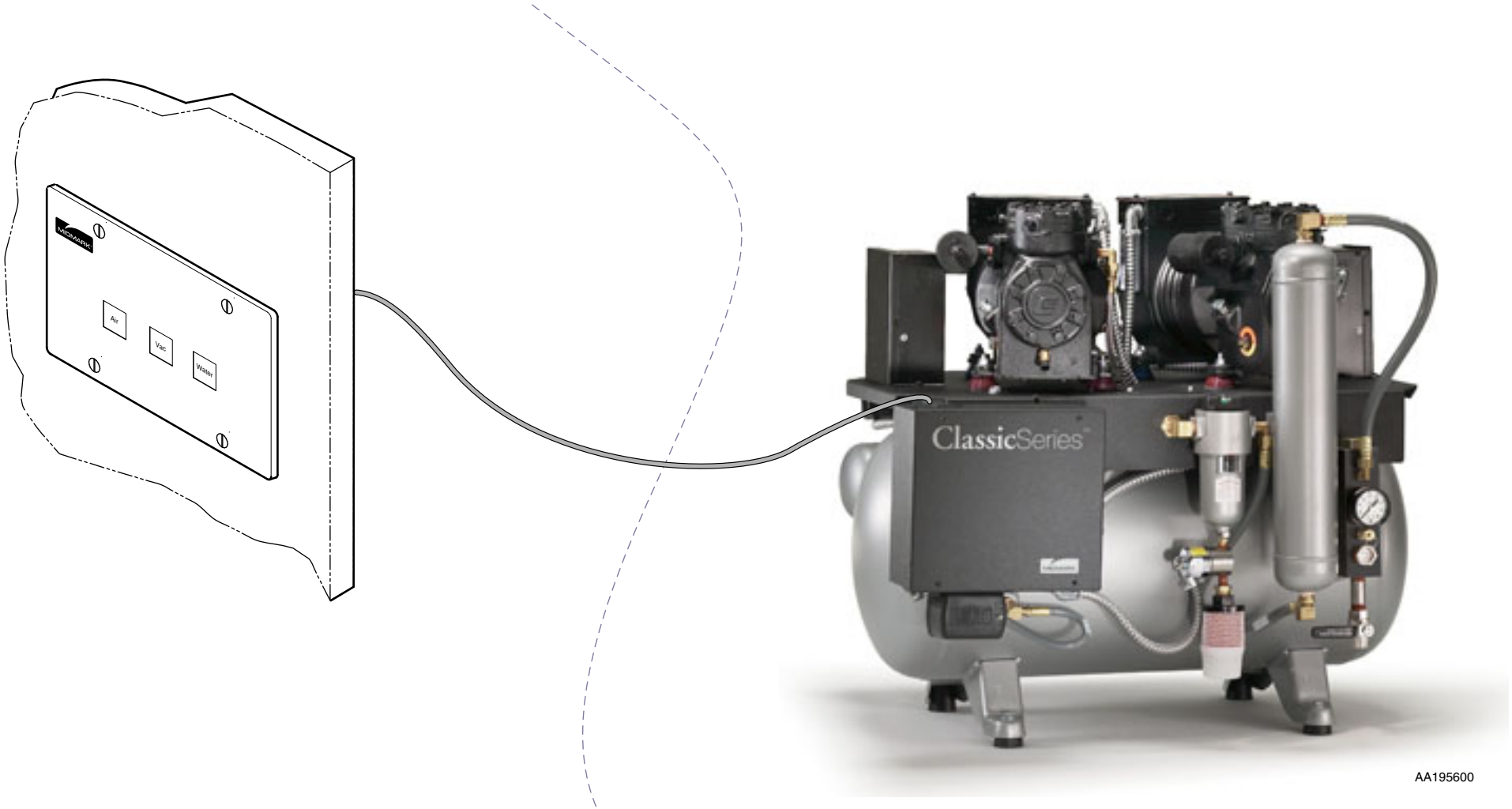
Low Voltage - Master Control Panel

Low Voltage Control — Go To Page:
Testing B-18
Wiring Diagrams D-1
Exploded Views E-1

Function and Location

The Master Control Panel will allow the user to control the dental equipment from the office area.
Supplies power to the relay switch.

**Note: Relay Switch is always live unless Low Voltage is turned off.*



AA195600

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Testing & Repair

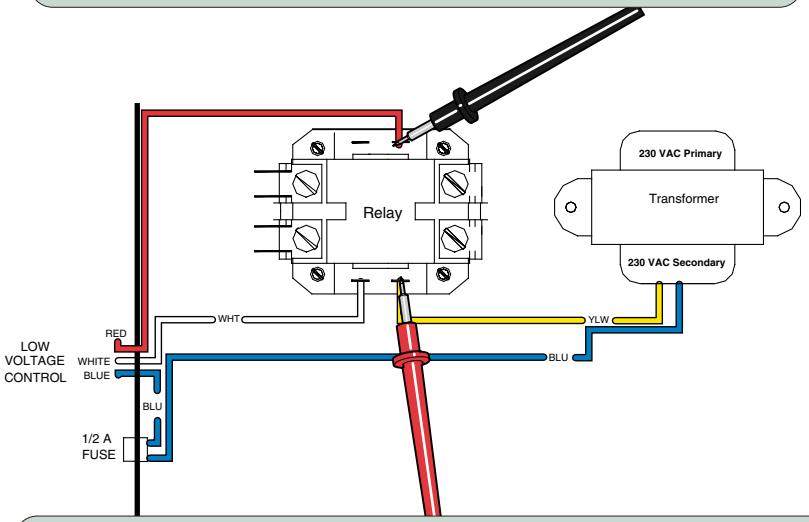
Low Voltage - Control Circuit

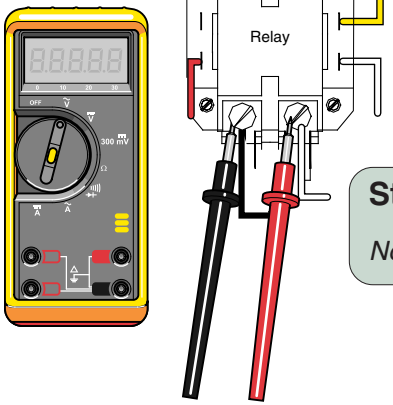
Testing

Step 1: Remove electrical box cover.
Check for broken or loose wiring.
Refer to: Section C Electrical Box Cover

Step 2: Check high voltage on contactor relay.
- Set meter to V̂.
- Place meter probes on front, black and white wires.

Note: Verify reading is 230 volts.

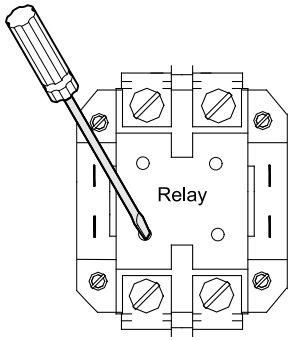




Low Voltage — Go To Page:
Fuse B-26
Access Procedures C-1
Wiring Diagrams D-1
Exploded Views E-1

Step 4: Insert screwdriver into relay to start manually.

Note: if system starts, replace contactor relay.



Caution
When testing components with power on use care to prevent electrical shock.

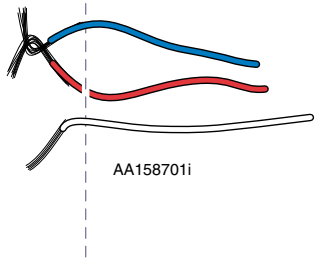
Step 5: Check fuse. Visually check to see if blown.
Refer To: Section B Fuse

Step 3: Check Low Voltage from transformer to low voltage wires.
Place meter probes on Yellow and Red wire contactor connections.

Note: Verify reading is 24 volts.

Meter Reading	*Status*	*Required Action*
High Voltage = < Line Voltage		Replace Contactor Relay
Low Voltage = < 24 Volts		Replace Transformer
High Voltage = Line Voltage		Contactor Relay - OK
Low Voltage = 24 Volts		Transformer - OK

Step 6: Bypass the remote switch to verify it is not defective.
Disconnect the Red, White and Blue wires from the remote switch.
Connect the Blue and Red wires together.



Models:	***CL21***	***CL22***	***CL32***	***CL52***	
Serial Numbers:	*0701L210001 thru 0901L210370*	*0701L220001 thru 0903L220294*	*0701L320001 thru 0901L320807*	*0701L520001 thru 0810CL520124*	
Models:	***P21***	***P22***	***P32***	***P52***	***P72***
Serial Numbers:	*0703P210001 thru 0903P210361*	*0703P220001 thru 0903P221139*	*0703P210001 thru 0903P321137*	*0703P210001 thru 0902P520467*	*0703P210001 thru 0903P720190*

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**Note - This procedure is only for units with Serial Numbers listed below.*

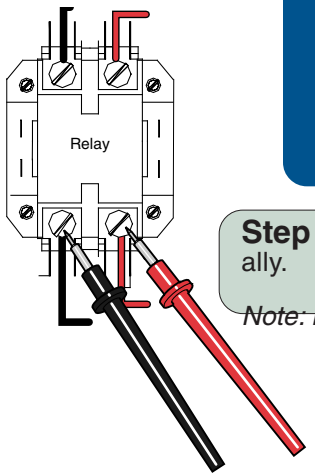
Low Voltage - Control Circuit

Testing

Step 1: Remove electrical box cover.
Check for broken or loose wiring.
Refer to: Section C Electrical Box Cover

Step 2: Check high voltage on contactor relay.
- Set meter to V.
- Place meter probes on indicated wires.

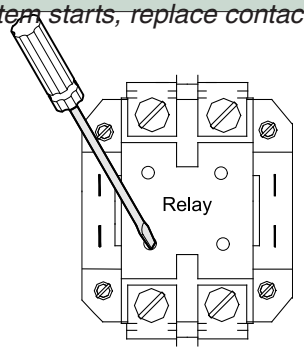
Note: Verify reading is 230 volts.

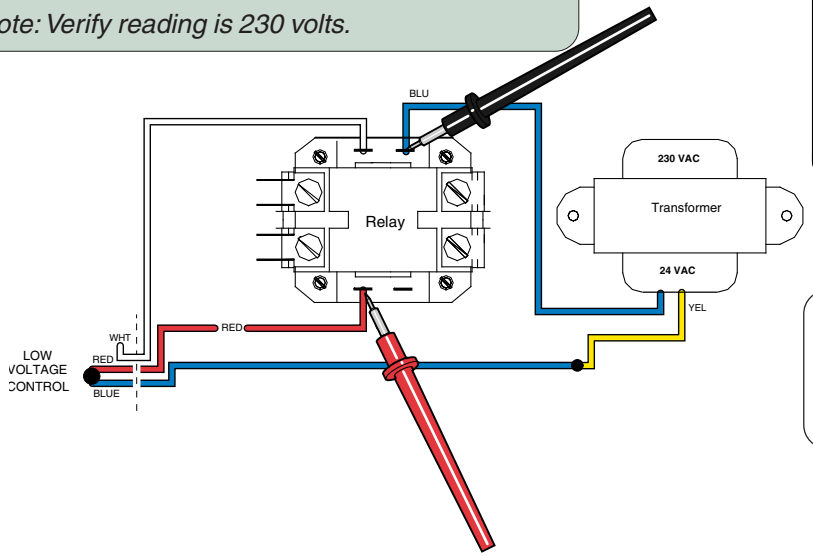


Refer To: | **Go To Page:**
Fuse B-26
Wiring Diagrams D-1
Exploded Views E-1

Step 4: Insert screwdriver into relay to start manually.

Note: If system starts, replace contactor relay.





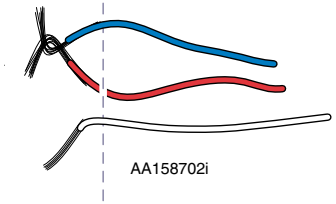
WARNING
High Voltage. When testing components with power on use care to prevent electrical shock.

Step 5: Check fuse.
Refer To: Section B Fuse

Step 3: Check Low Voltage from transformer to low voltage wires.
Place meter probes on blue and red wire contactor connections.

Note: Verify reading is 24 volts.

Meter Reading	Status	Required Action
High Voltage = < Line Voltage Low Voltage = < 24 Volts		Replace Contactor Relay Replace Transformer
High Voltage = Line Voltage Low Voltage = 24 Volts		Contactor Relay - OK Transformer - OK



Step 6: Bypass the remote switch to verify it is not defective.
Disconnect the Red, White and Blue wires from the remote switch.
Connect the Blue and Red wires together.
If the relay and fans work, then replace remote switch or wiring.

Models: / Serial Numbers:	CL21	CL22	CL32	CL52	All
	0902L210372 thru Present	0903L220296 thru Present	0901L320813 thru Present	0810L520126 thru Present	V785000 thru Present

Models: / Serial Numbers:	P21	P22	P32	P52	P72
	0904P210365 thru Present	0904P221146 thru Present	0904P321145 thru Present	0904P520474 thru Present	0903P720191 thru Present

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Testing & Repair

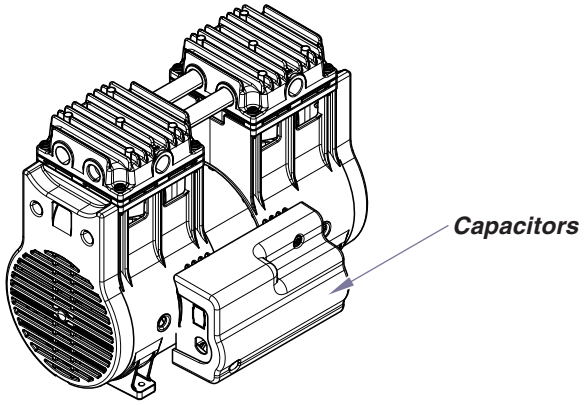
Capacitor

Refer to: **Go To Page:**
Testing B-21
Wiring Diagrams D-1
Exploded views E-1

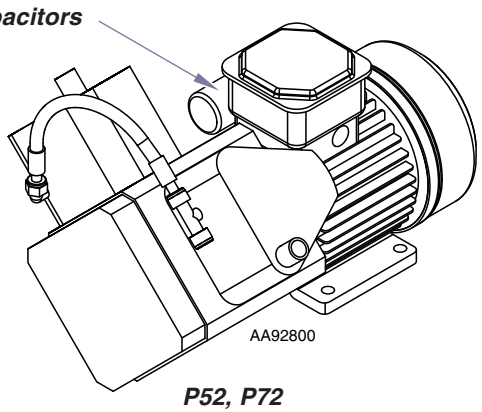
Function and Location

The capacitor's function is to store electricity, or electrical energy. The capacitor also functions as a filter, passing alternating current (AC), and blocking direct current (DC).

PowerAir® Capacitors are located on Compressor Heads



P21, P22, P32



P52, P72

ClassicSeries® Capacitor-Relay Box

Capacitor

Models: ***All***
Serial Numbers:

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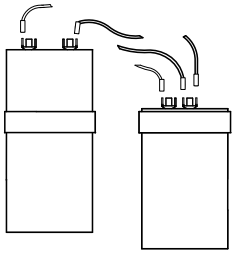
Capacitor

Testing

Step 1: Disconnect power.



Step 2: Access start and run capacitors and disconnect capacitor wiring.

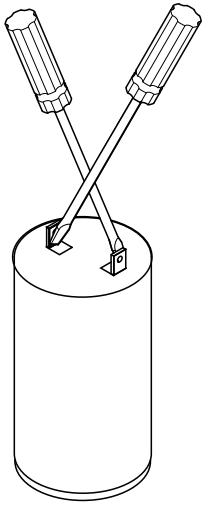
NOTE: The best check is to replace the capacitor with a known good one. The replacement capacitor MUST be of the same Mfd and Voltage Ratings or the motor could be damaged.

NOTE:

1HP 115V Run Capacitor: 40MFD 370v
Start Capacitor: 430-516MFD 125v

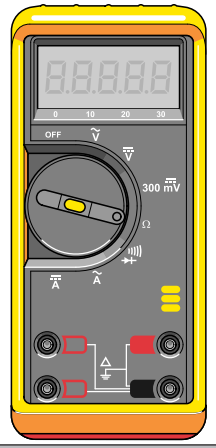
1HP 208-230v Run Capacitor: 20MFD 440v
Start Capacitor: 145-174MFD 220v

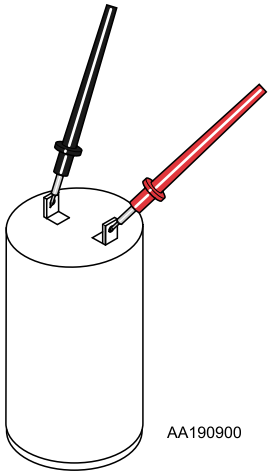
Step 3: Discharge capacitors by touching screwdrivers to two contacts on a capacitor and to each other.



Step 5: Place meter probes on capacitor connectors. Reverse the leads, this should produce the same reading.

Step 4: Set meter to highest Ω reading.





AA190900

Meter Reading	*Status*	*Required Action*
"O" or "Open" Reading		Replace Capacitor
Start Low and Increases		Capacitor - OK

Models: ***All***
Serial Numbers:

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Testing & Repair

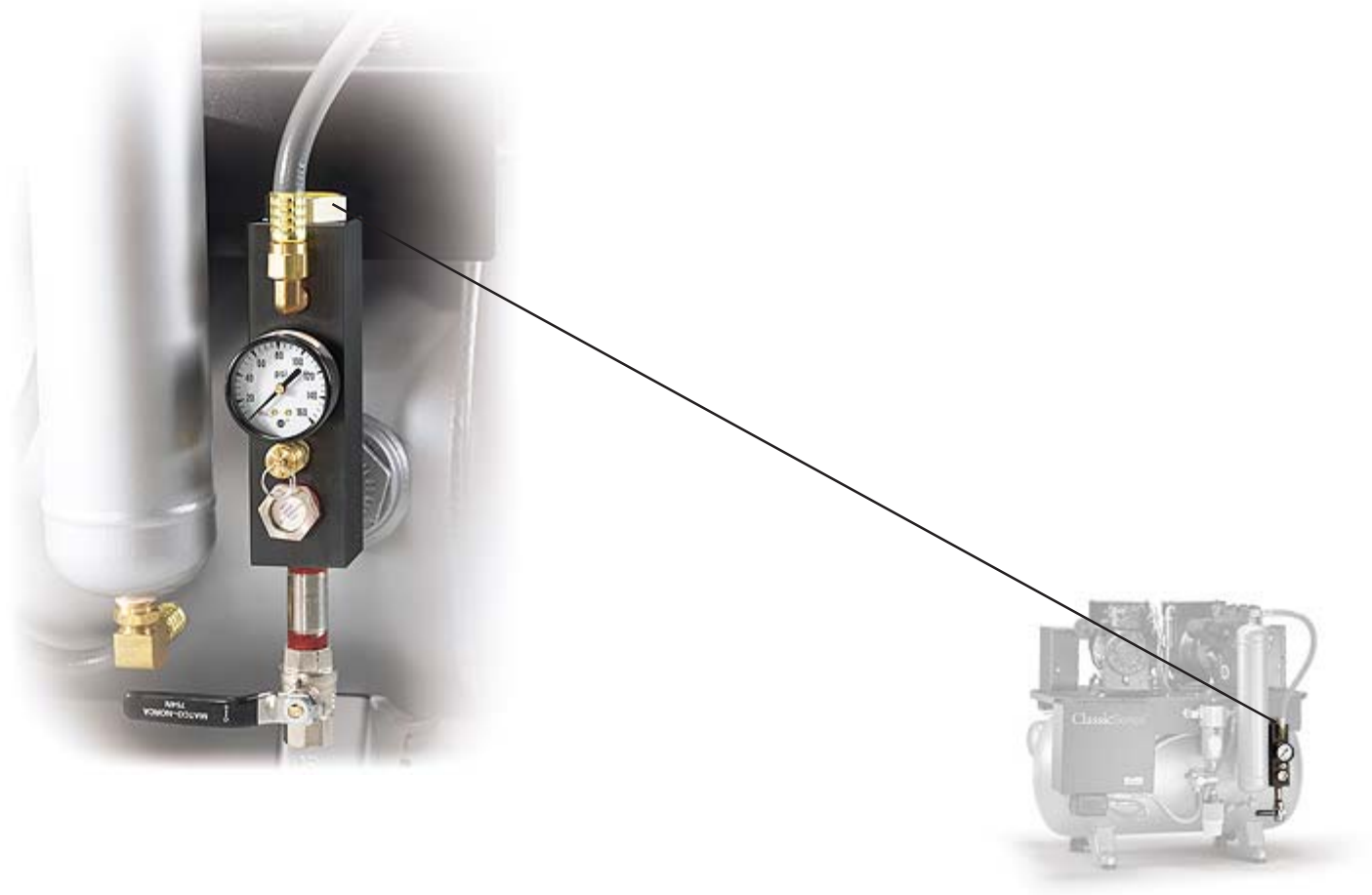
Check Valve

Function and Location

The manifold check valve allows pressurized air to flow into the storage tank when the compressors are running. The valve closes and does not allow air flow during the purge cycle. Remove cap on top of manifold block access the check valve.

Refer to: **Go To Page:**
Cleaning B-23
Exploded views E-1

www.midmark.com: **File Name**
Manifold Check Valve
Replacement 10541600



Check Valve

Models: ***All***
Serial Numbers:

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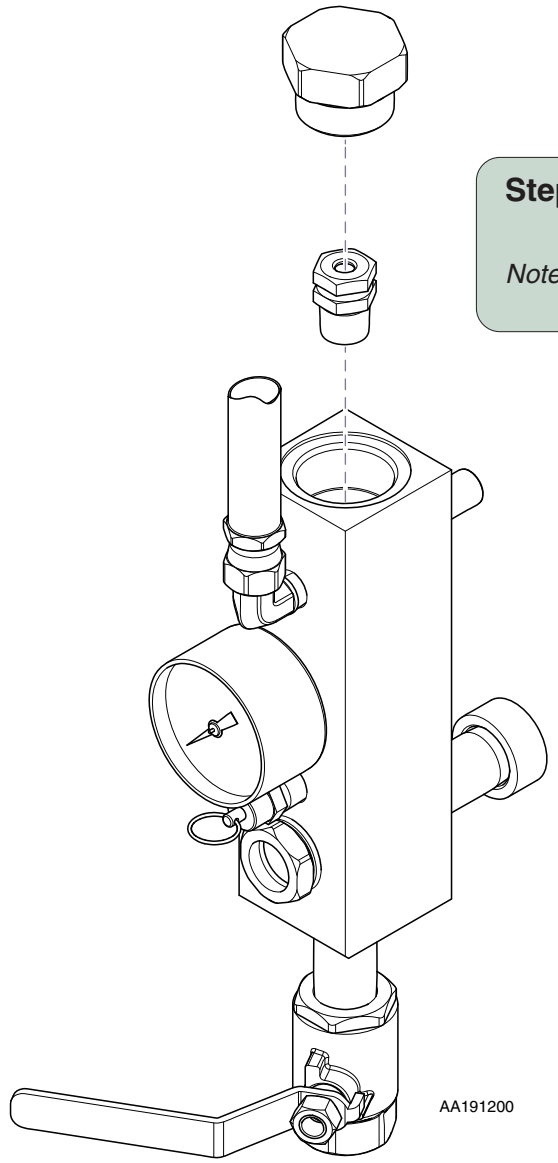
Check Valve

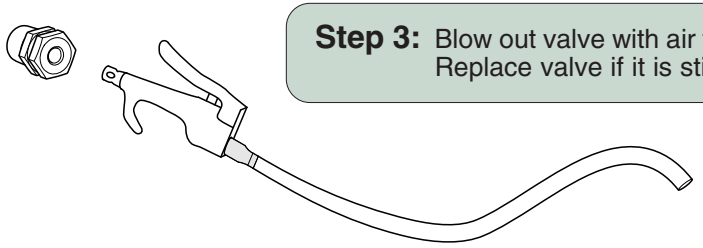
Cleaning

Step 1: Disconnect power.



Step 2: Remove manifold cap.
Remove check valve.

Note: Use Ratchet with extension and 3/4" socket to loosen valve.
Use needle nose pliers to lift check valve out of block.



Step 3: Blow out valve with air to clean.
Replace valve if it is sticking.

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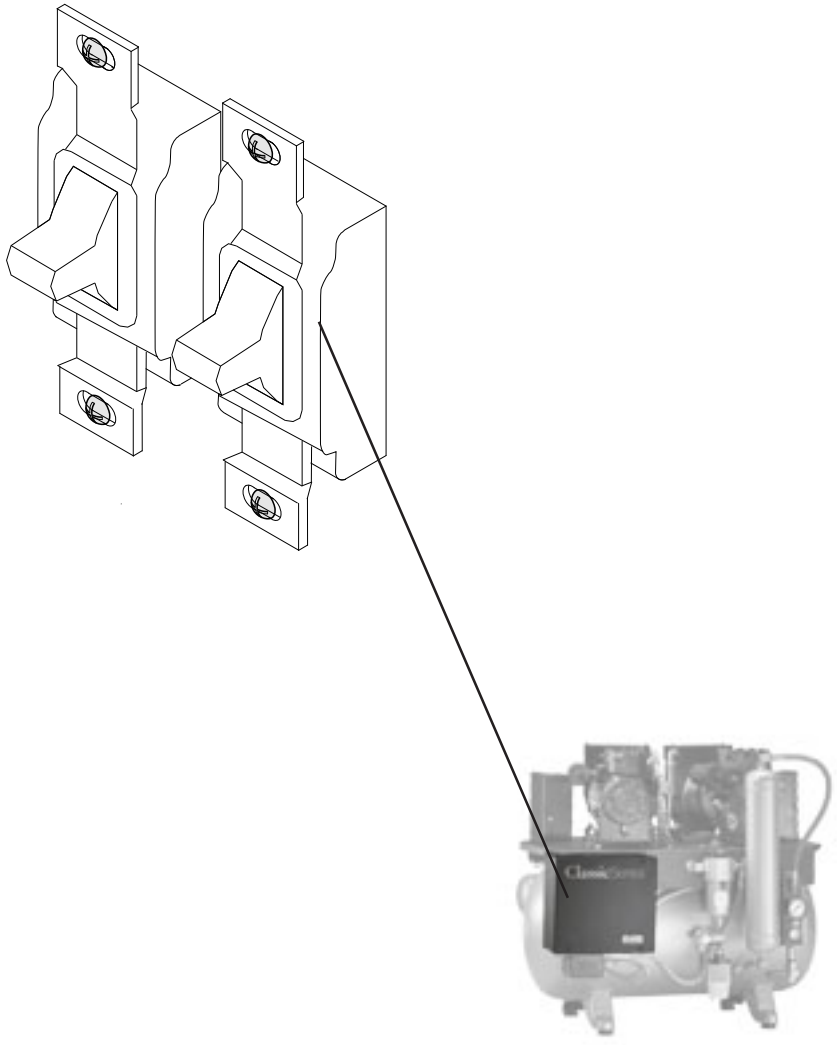
Testing & Repair

On/Off Switches

Refer to: **Go To Page:**
Testing B-25
Wire Diagrams D-1
Exploded views E-1

Function and Location

The On/Off switch send power to the compressor heads. Each compressor head has an On/Off switch.



AA191900

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On/Off Switch

Testing

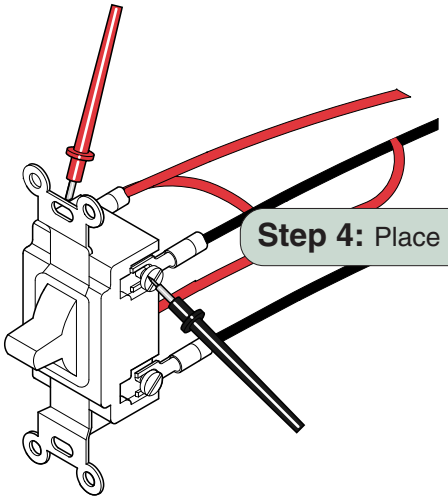
Step 1: Remove electrical box cover.

Refer to: Section C Electrical Box

Step 2: Set meter to ṼV.

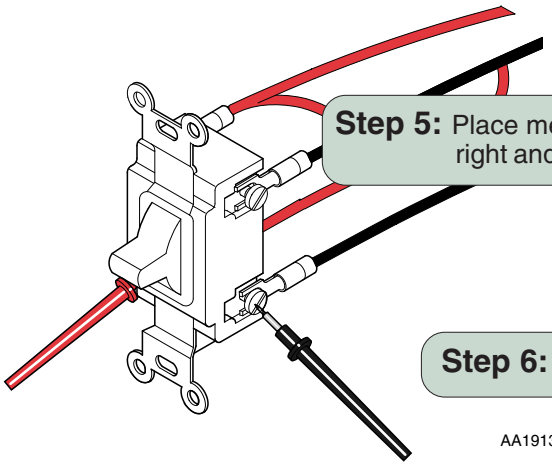
Refer to: **Go To Page:**
Access Procedures C-1
Wire Diagrams D-1

Caution
When testing components with power on use care to prevent electrical shock.



Step 3: Turn switch on.

Step 4: Place meter probes on top right and top left side.



Step 5: Place meter probes on bottom right and bottom left side.

Step 6: Turn switch off.

AA191300

NOTE: *If all connections on top but one are reading correct voltage when there is multiple switches, check jumper wire connections.*

Meter Reading	*Status*	*Required Action*
230 Volt Models: < 230 Volts 115 Volt Models: < 115 Volts		Replace On/Off Switch
230 Volt Models: 230 Volts 115 Volt Models: 115 Volts		On/Off Switch - OK

Models: ***All***
Serial Numbers:

On/Off Switch

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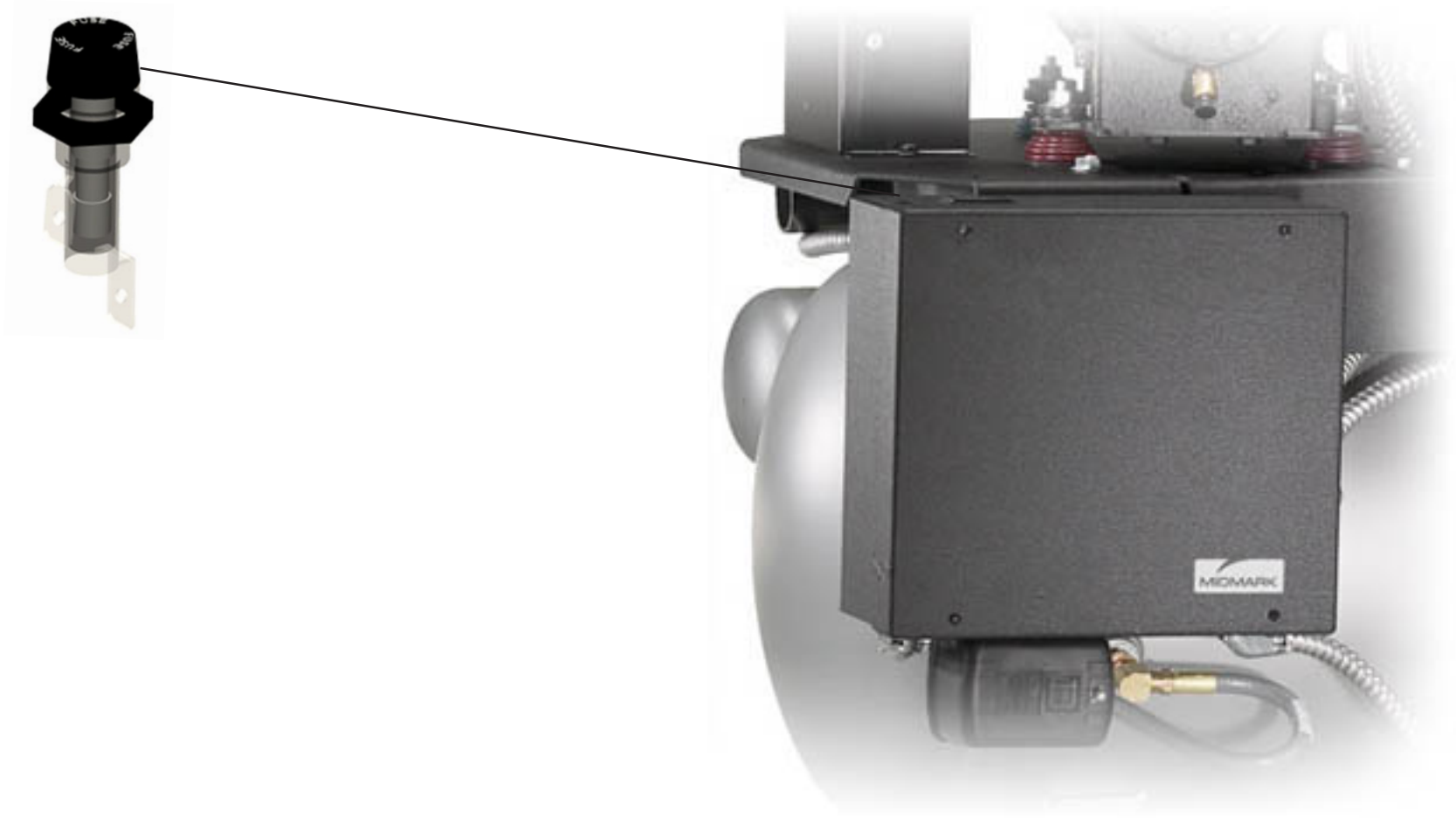
Testing & Repair

Fuse

Refer to: *Go To Page:*
Check B-27
Exploded Views E-1

Function and Location

The fuse protects the low voltage control system against overload failure, mainly short circuits. It is located in the electrical box and accessed on top of the electrical box.



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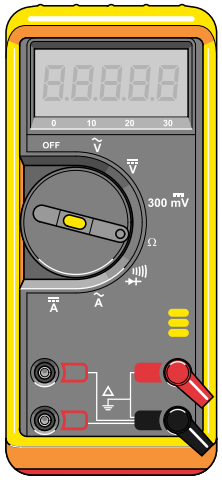
Testing & Repair

Fuse

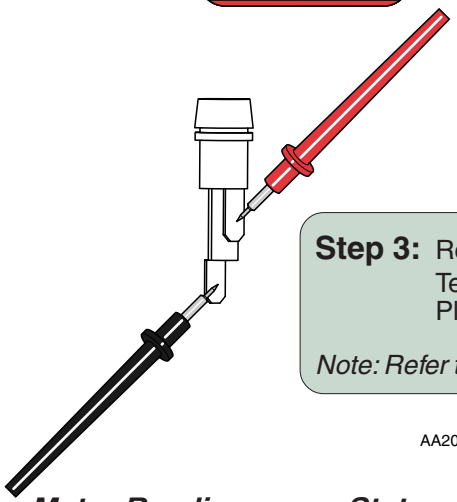
Check

Refer to: Go To Page:
Function and Location B-26



Step 1: Turn power off.

Step 2: Remove electrical box cover.
Refer to: Section C Electrical box cover



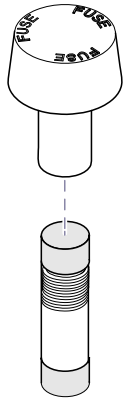
AA202500

Step 3: Remove terminal leads.
Test continuity. Set meter to **Ω.**
Place meter probes on both fuse terminals.

Note: Refer to table below.

Meter Reading	*Status*	*Required Action*
OL - off line		Replace Fuse *1/3 amp 250V Slo-Blo fuse*
Continuity checks ok Visually looks ok		Fuse is Good

Step 4: Remove fuse from electrical box.
Push in and turn cap counter clockwise.



AA191600

Step 5: Visually check to see if fuse is burnt or broken.

Note: If fuse is burnt or broken replace with a 1/3 amp 250V Slo-Blo fuse.

Step 6: Reinstall into electrical box.
Push in and turn cap clockwise until it locks in place.

Models: ***All***
Serial Numbers:

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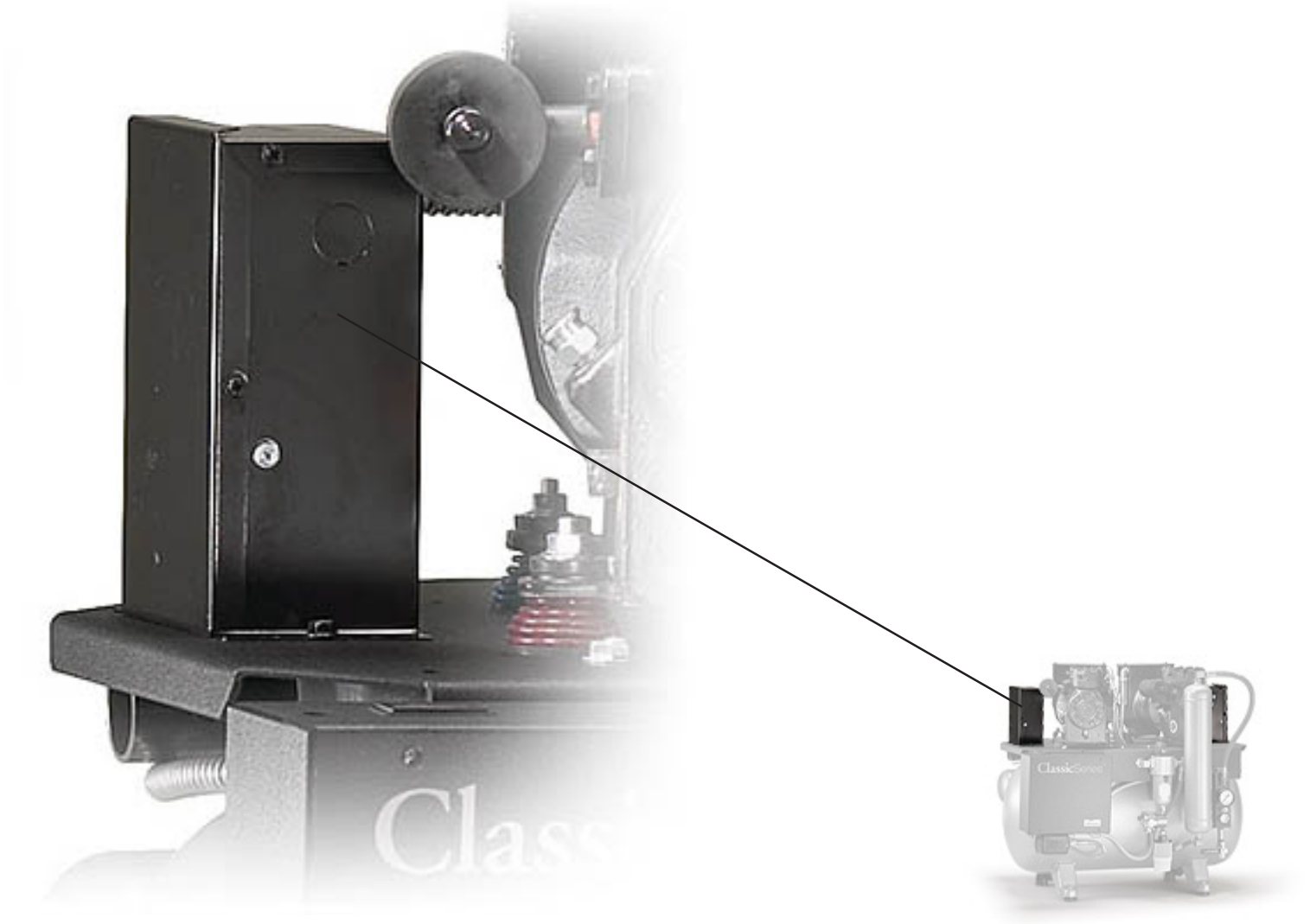
Testing & Repair

Start Relay

Refer to: *Go To Page:*
Testing B-29
Wire Diagrams D-1
Exploded views E-1

Function and Location

The start relay is located in the capacitor box. The start relay switches the load/current/voltage from the start winding to the run winding as the rpm increases and load balance changes as required to optimize the performance characteristics of the electric motor.



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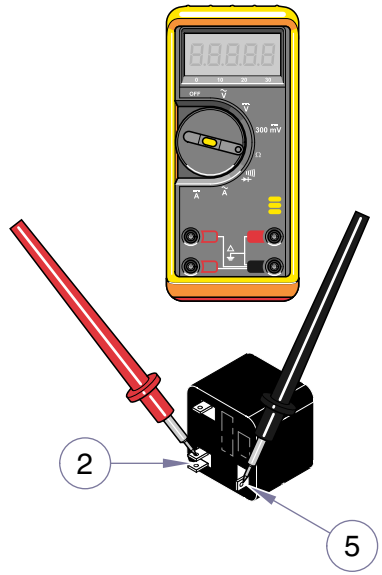
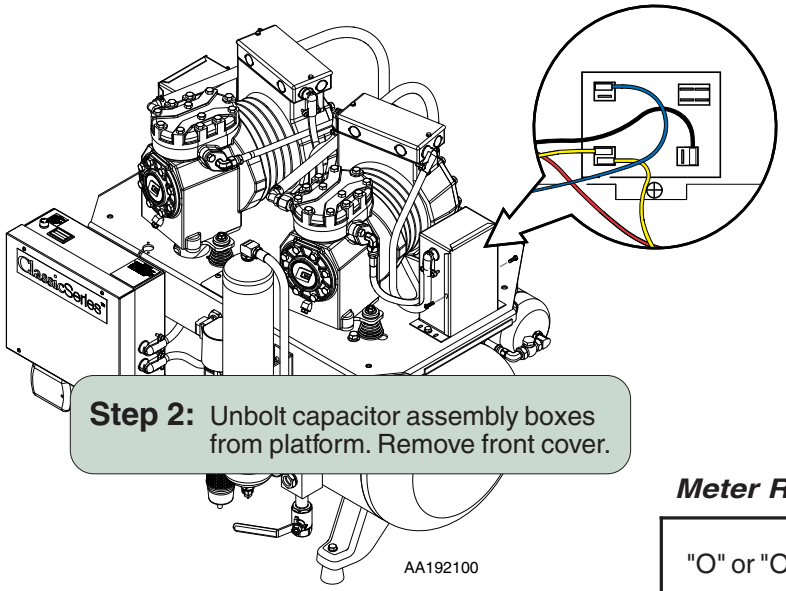
Start Relay

Testing

Step 1: Tap capacitor box.

Note: *If motor starts, relay was stuck, replace relay.*





Step 2: Unbolt capacitor assembly boxes from platform. Remove front cover.

Relay Test

Step 3: Test continuity. Set meter to **Ω.** Place meter probes on *contacts #2 & 5.*

Note: *# 2 & 5 are a resistance circuit.*

Meter Reading	*Status*	*Required Action*
"O" or "Open" Reading		Relay
Start Low and Increases		Relay - OK

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Testing & Repair

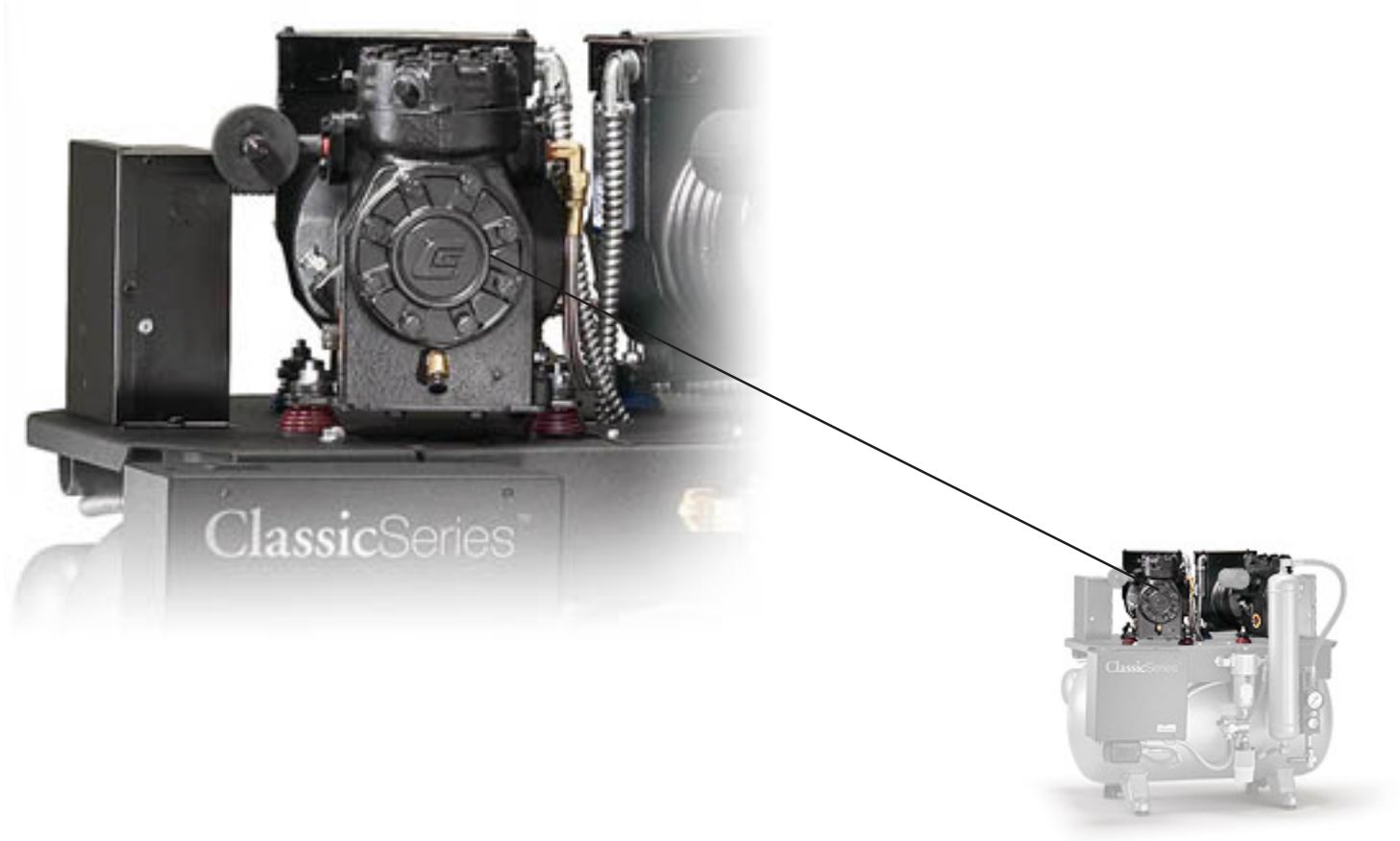
Compressor Heads

Function and Location

Atmospheric air is drawn in through intake filters to the compressor head(s) where air is compressed and exhausted to the reservoir (tank).
Heat is generated from the compression process.

Refer to: **Go To Page:**
Check B-31
Wiring Diagrams D-1
Exploded views E-1

www.midmark.com: **File Name**
Lubricated Head Replacement 10542300



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Testing & Repair

Compressor Heads

Check

Thermal Overload Test

Step 1: Turn power off.

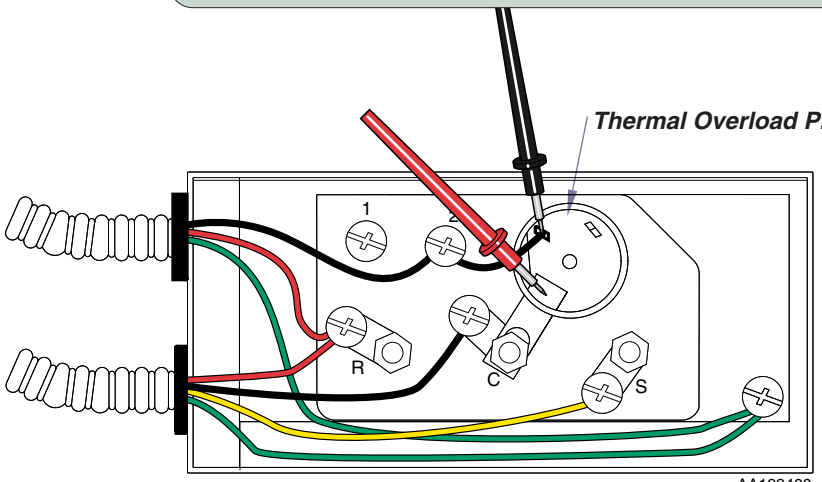
Step 2: Remove electrical cover on compressor head.

Refer to Section C: Compressor Head - Electrical

Thermal Overload Test

Step 3: Test continuity. Set meter to **Ω.**
Place meter probes on ***Thermal Overload.***

Note: *System is overheated if you have an Open Circuit reading. Allow system to cool down and try to restart. If system does not start, replace compressor heads.*

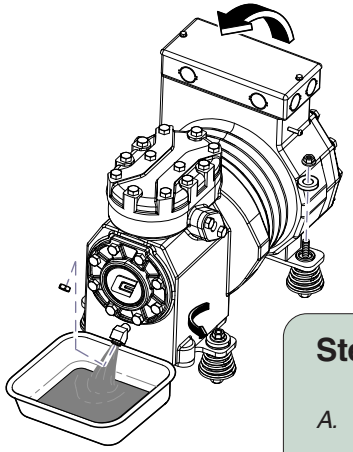


Electrical Box on top of Compressor

AA192400

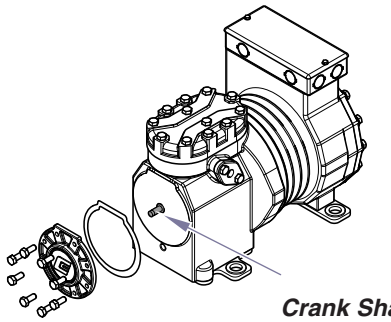
Check Crank Shaft

Refer to: Access Procedures C-1
Go To Page:



Step 1: ***To drain oil from compressor...***

A. Place a pan under the drain plug, then remove drain plug.
B. Loosen front mounting nuts. Remove rear mounting nuts.
C. Tip compressor forward to drain all oil.



Crank Shaft

Step 2: Access Crank Shaft.
Verify crank shaft will turn.

Note: If shaft will not turn, motor needs replaced.

Models: / ***Serial Numbers:***	***CL21 CL22*** *All*	***CL32 CL52*** *All*

Compressor Head

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Testing & Repair

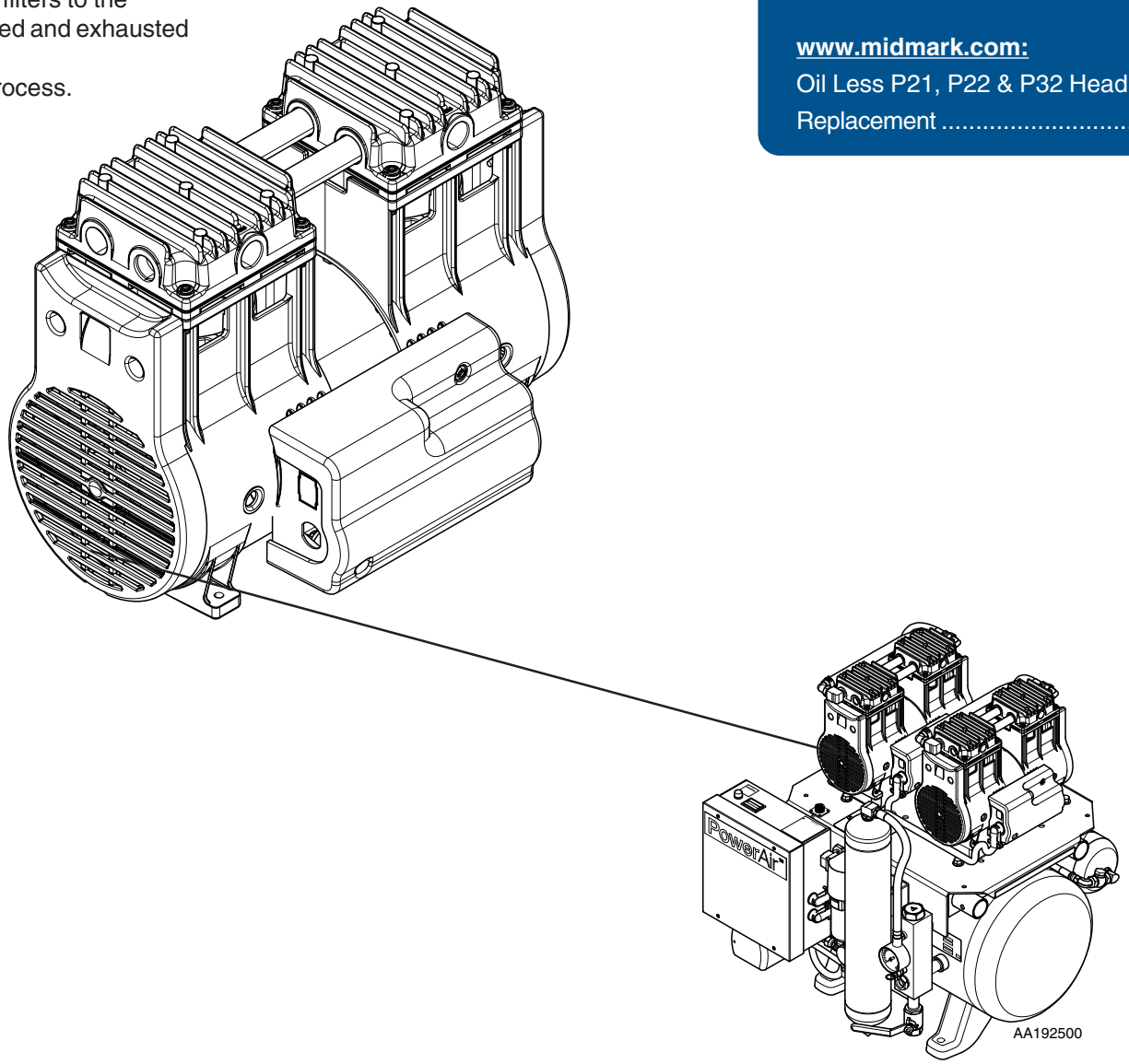
Compressor Heads

Function and Location

Atmospheric air is drawn in through intake filters to the compressor head(s) where air is compressed and exhausted to the reservoir (tank).
Heat is generated from the compression process.

Refer to: **Go To Page:**
Wiring Diagrams D-1
Exploded views E-1

www.midmark.com: **File Name**
Oil Less P21, P22 & P32 Head
Replacement 10567900



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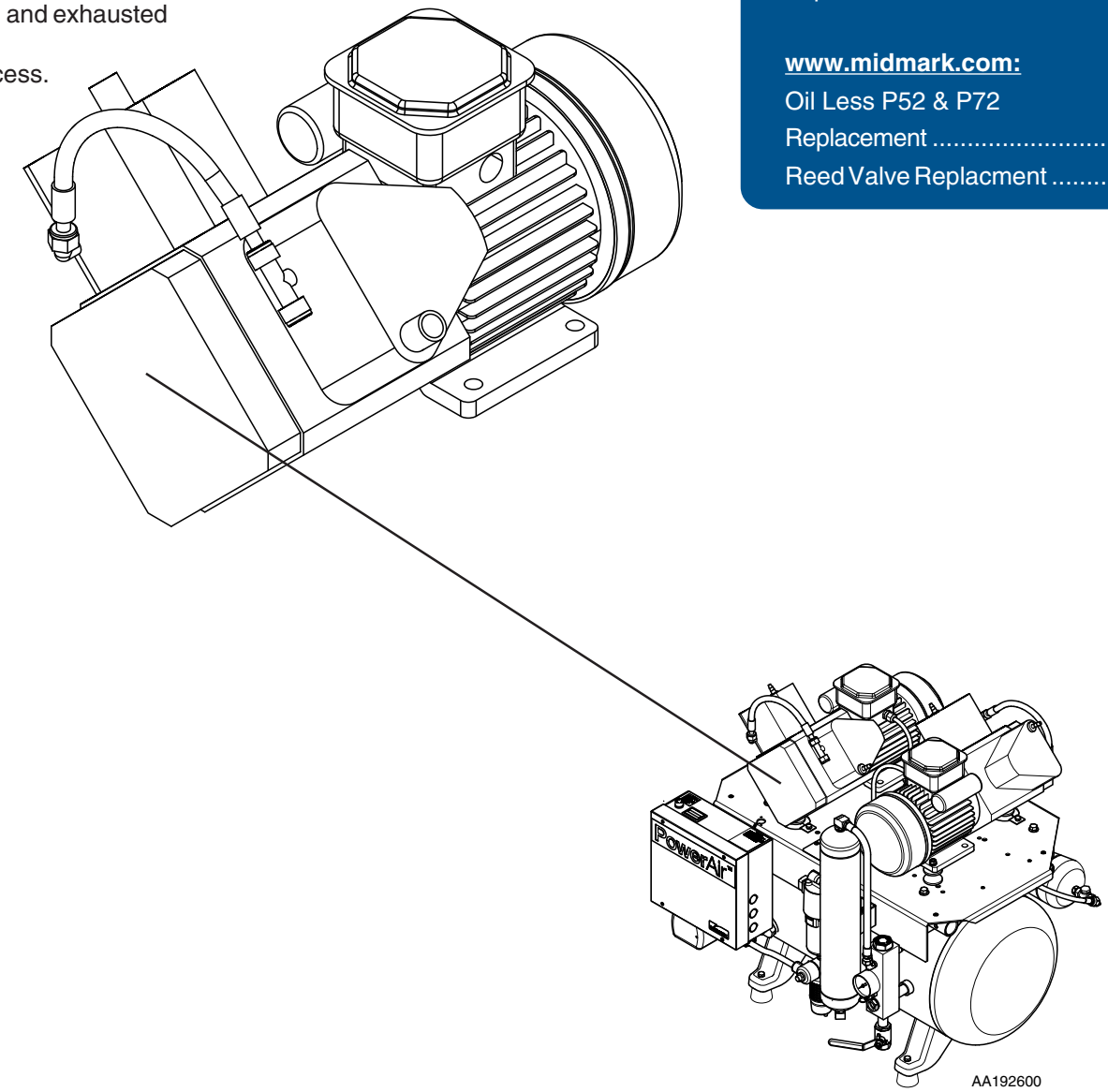
Compressor Heads

Function and Location

Atmospheric air is drawn in through intake filters to the compressor head(s) where air is compressed and exhausted to the reservoir (tank).
Heat is generated from the compression process.



AA192600

Refer to: | **Go To Page:**
Check B-34
Wiring Diagrams D-1
Exploded views E-1

www.midmark.com: | **File Name**
Oil Less P52 & P72
Replacement 10485200
Reed Valve Replacment 10499600

Models:	P52	P72
Serial Numbers:	All	All

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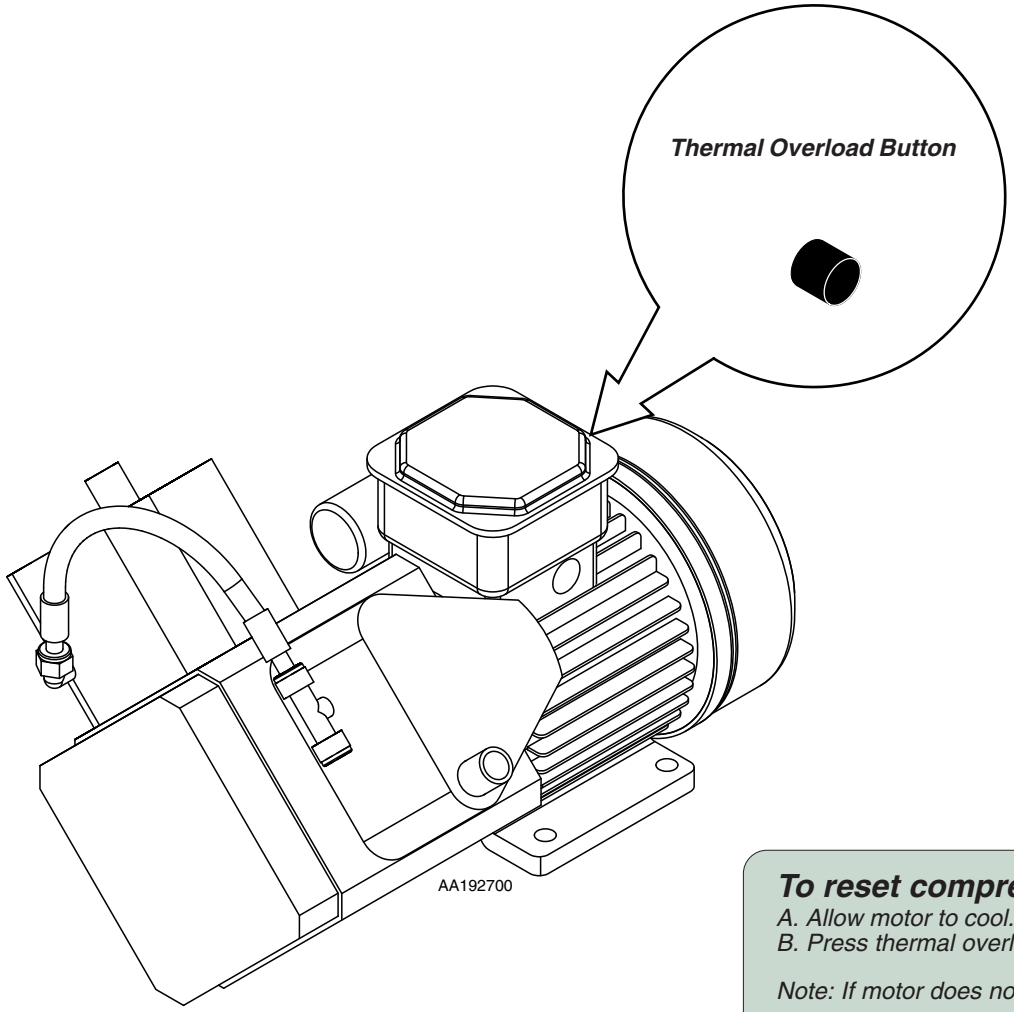
Testing & Repair

Compressor Heads

Check



To reset compressor head...

A. Allow motor to cool.
B. Press thermal overload reset button.

Note: If motor does not start replace compressor heads.

Compressor Head

Models: *Serial Numbers:*	***P52*** *All*	***P72*** *All*

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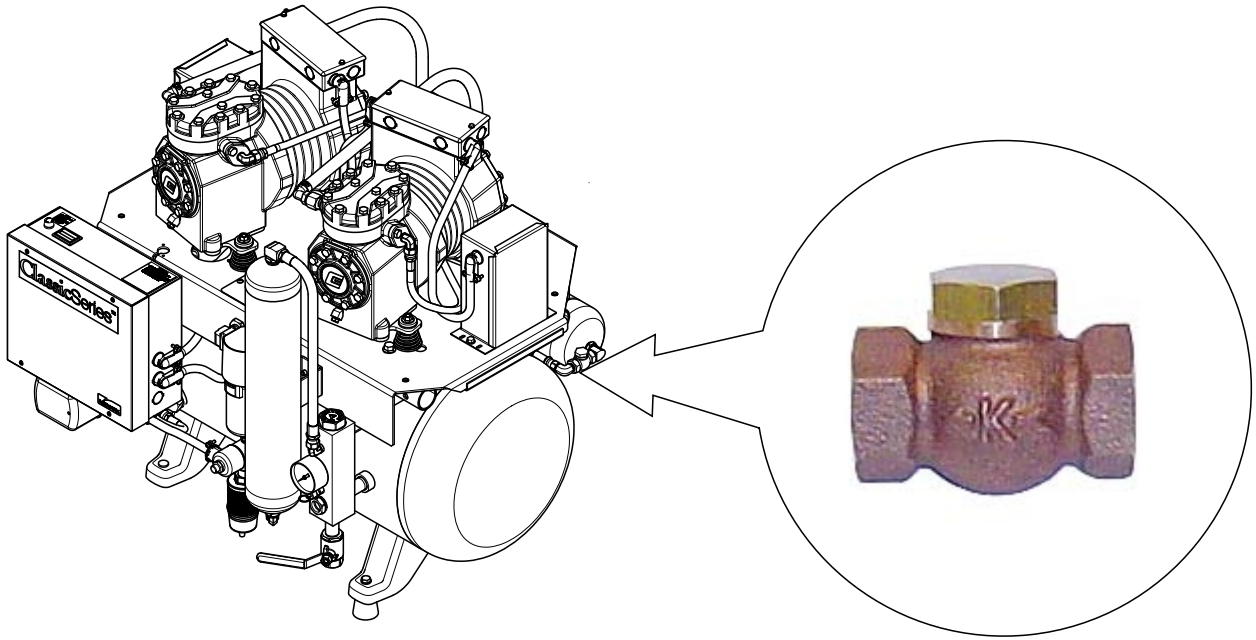
Purge Valve

Location and Function

The purge valve requlates the flow of purged/discharged air from the purge tank to the desiccant tank.

Refer to: **Go To Page:**
Check B-36
Exploded views E-1



AA194400

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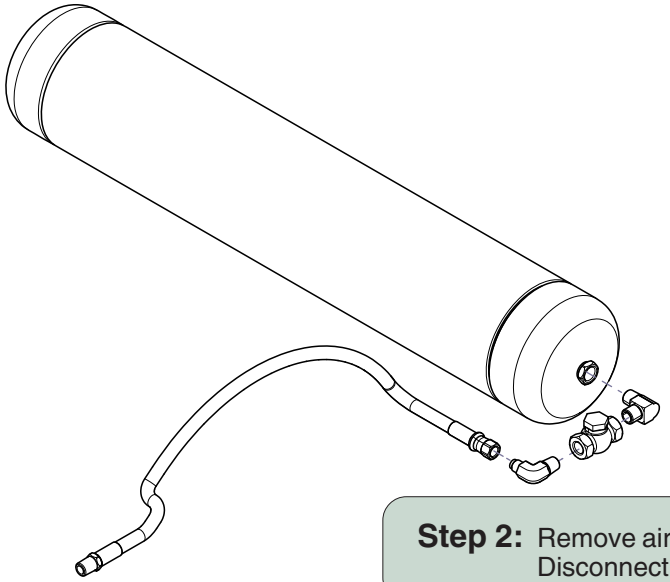
Testing & Repair

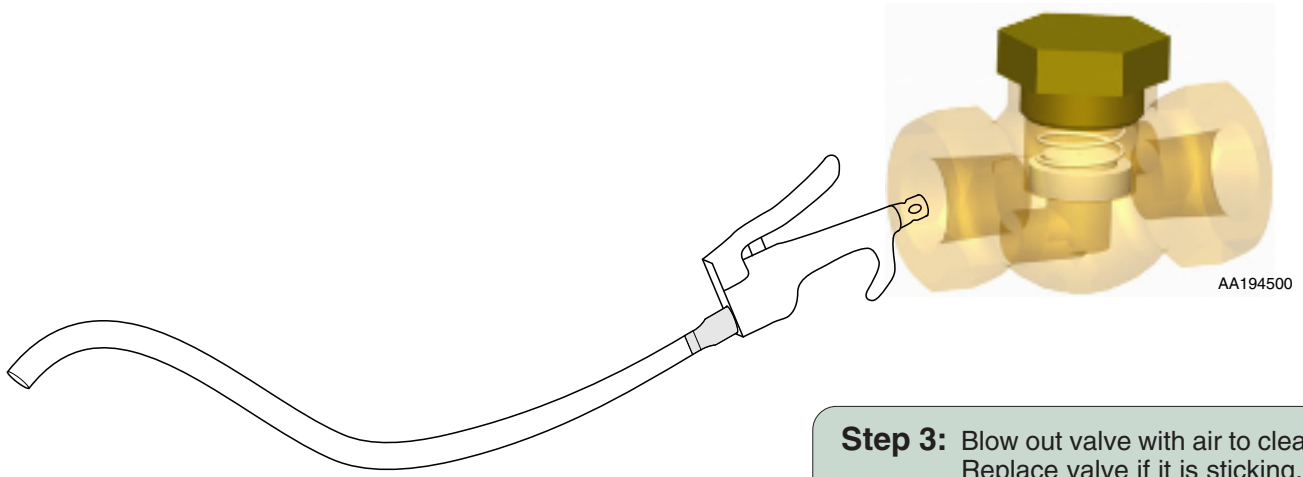
Purge Valve

Check

Step 1: Disconnect power.



Step 2: Remove air line tubing from purge valve. Disconnect purge valve from purge tank fitting.



Step 3: Blow out valve with air to clean. Replace valve if it is sticking.

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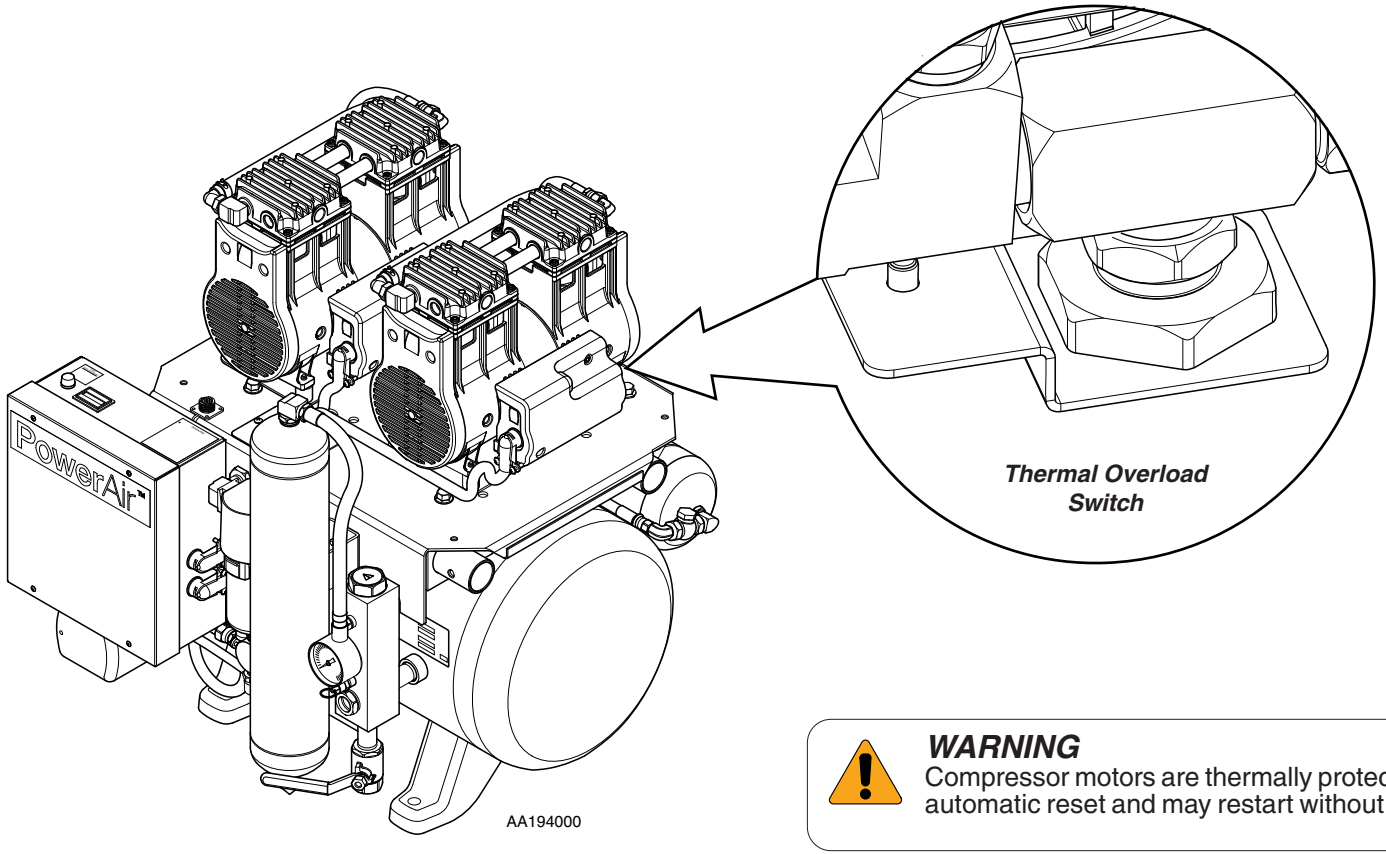
Thermal Overload Switch

Refer to: | **Go To Page:**
Testing B-38
Wiring Diagrams D-1
Exploded views E-1

Location and Function

PowerAir® compressors motors are thermally protected also the control circuit contains an automatic reset which shuts motors down if the ambient temperature becomes too high. The switch is located on the saddle behind and below the compressor heads.



WARNING
Compressor motors are thermally protected with automatic reset and may restart without warning.

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Testing & Repair

Thermal Overload Switch

Testing

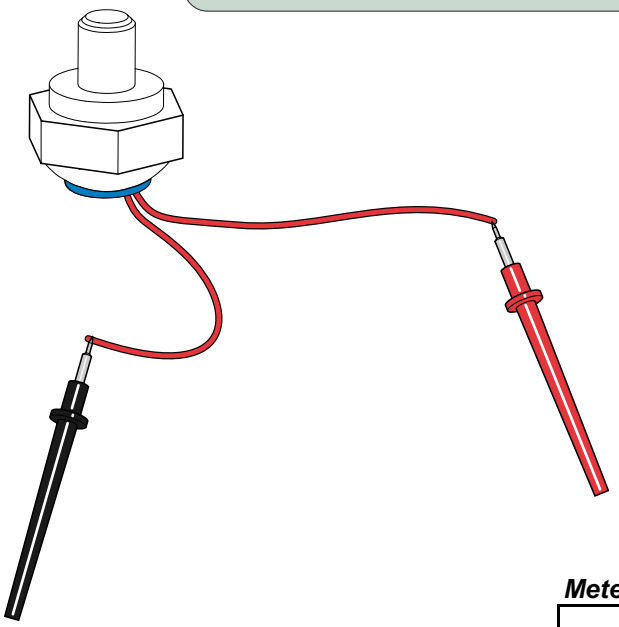
WARNING
Compressor motors are thermally protected with automatic reset and may restart without warning.

Step 1: Disconnect power to the compressor.

AA194200

Step 2: Access electrical box.
Refer to: Section C Quiet Cover

ContinuityTest
Step 3: Test continuity. Set meter to **Ω.**
Disconnect switch at Transformer.
Place meter probes on ends of switch.



Refer to: | **Go To Page:**
Access Procedures C-1
Wiring Diagrams D-1
Exploded views E-1

Attention:
To avoid compressor overheating and thermal shutdowns, equipment room must be properly ventilated. Ambient temperature should not exceed 104 ° Fahrenheit / 40° Celsius.

Meter Reading	*Status*	*Required Action*
"O" or "Open" Reading		Replace Switch
Start Low and Increases		Switch - OK

Models:	*P21*	*P22*	*P32*	*P52*	*P72*
Serial Numbers:	*All*	*All*	*All*	*All*	*All*

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Quiet Cover - Fans *(Accessory for PowerAir® Models)*

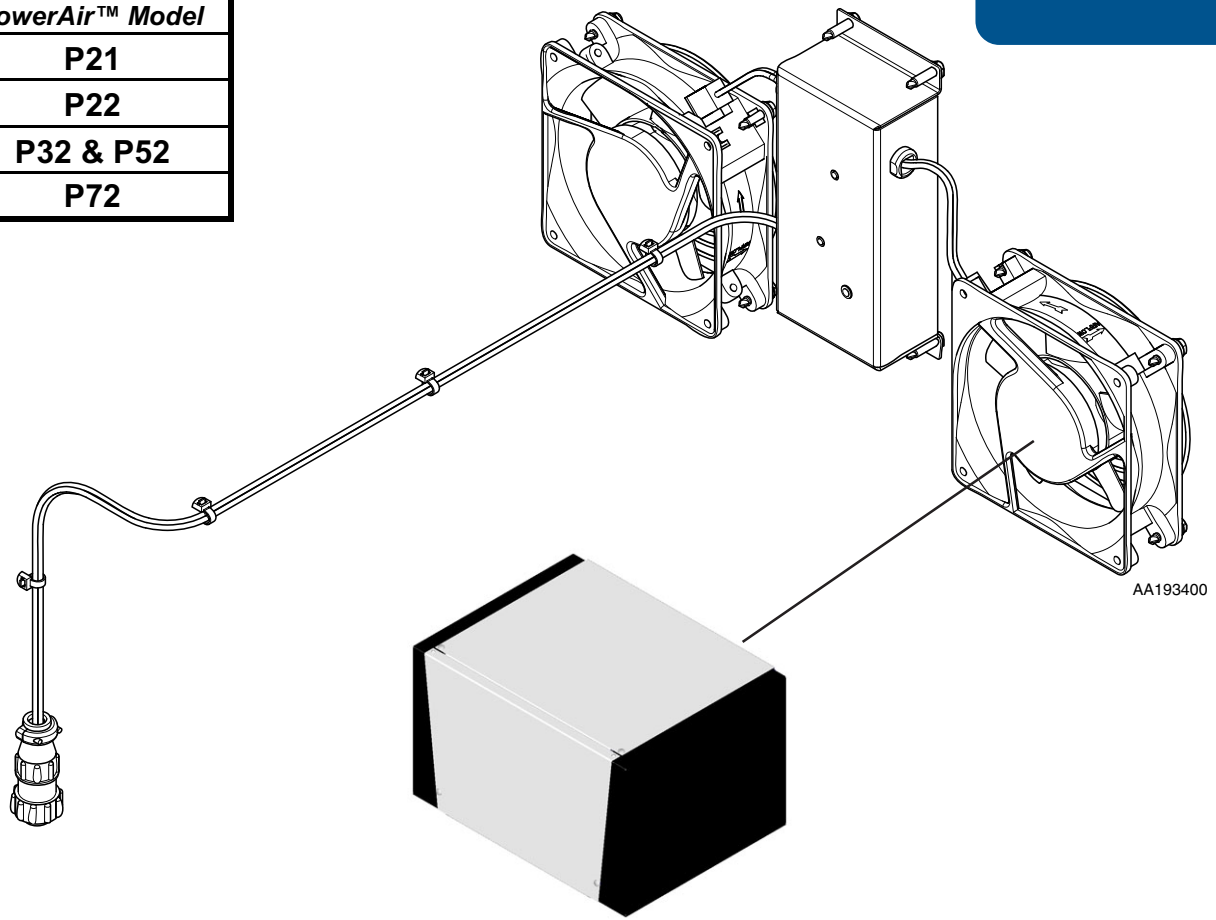
Location and Function

The thermostat closes at 95° +/- 7°. The termostat opens at 70 degrees (+/- degrees).

Sound Cover	*Accessory for PowerAir™ Model*
77001603	**P21**
77001604	**P22**
77001605	**P32 & P52**
77001606	**P72**

Refer to: **Go To Page:**
Testing B-40
Access Procedures C-1
Wiring Diagrams D-1
Exploded views E-1

NOTE: *Quiet Cover assembly instructions are provided with Quiet Cover.*



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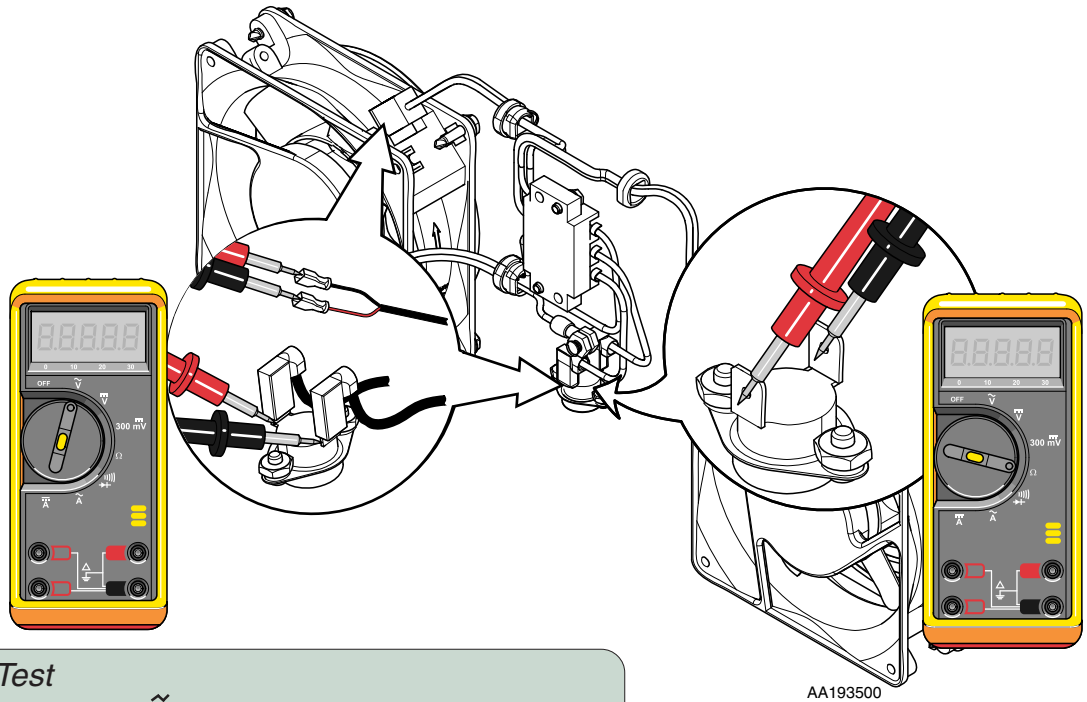
Testing & Repair

Quiet Cover - Fans (Accessory for PowerAir® Models)

Refer to: **Go To Page:**
Access Procedures C-1

Testing

Step 1: Access fan electrical box.
Refer to: Section C Quiet Cover



Caution
When testing components with power on use care to prevent electrical shock.

Continuity Test
Step 3: Test continuity. Set meter to **Ω.**
Place meter probes on switch.

Voltage Test
Step 2: Set meter to Ṽ.
Check voltage at switch...
Place meter probes at fan connections on switch.
Check voltage at fans...
Unplug fan wires. Place meter probes on fan wires.

Meter Reading	*Status*	*Required Action*
230 Volt Models: < 230 Volts 115 Volt Models: < 115 Volts		Replace Fan(s)
230 Volt Models: 230 Volts 115 Volt Models: 115 Volts		Fan(s) - OK
"C" or "Closed" Reading		Replace Switch
Start Low and Increases		Switch - OK

Models: ***P21*** ***P22*** ***P32*** ***P52*** ***P72***
Serial Numbers: *Accessory*

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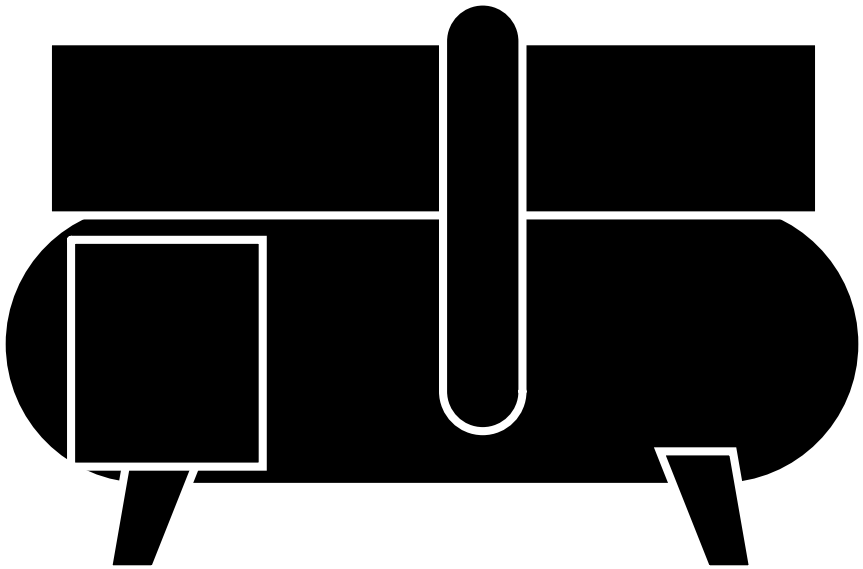
Section C

Access Procedures

Removing & Installing: Go To Page:
Check Valve C-2
Electrical Box Cover C-3
Only Models CL21, CL22, CL32, CL52
Capacitor / Relay Box C-4
Compressor Head - Electrical Cover C-5
Only Models P21, P22, P32, P52, P72
Quiet Cover Electrical Box (accessory) . C-6
Pressure Switch Cover C-7

Click GO TO PAGE: button (then enter desired page number) to view any page in this document.



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Access Procedures

Check Valve

Removal/Installation

Removal
Step 1: Disconnect power.

Removal
Step 2: Drain air pressure from system.

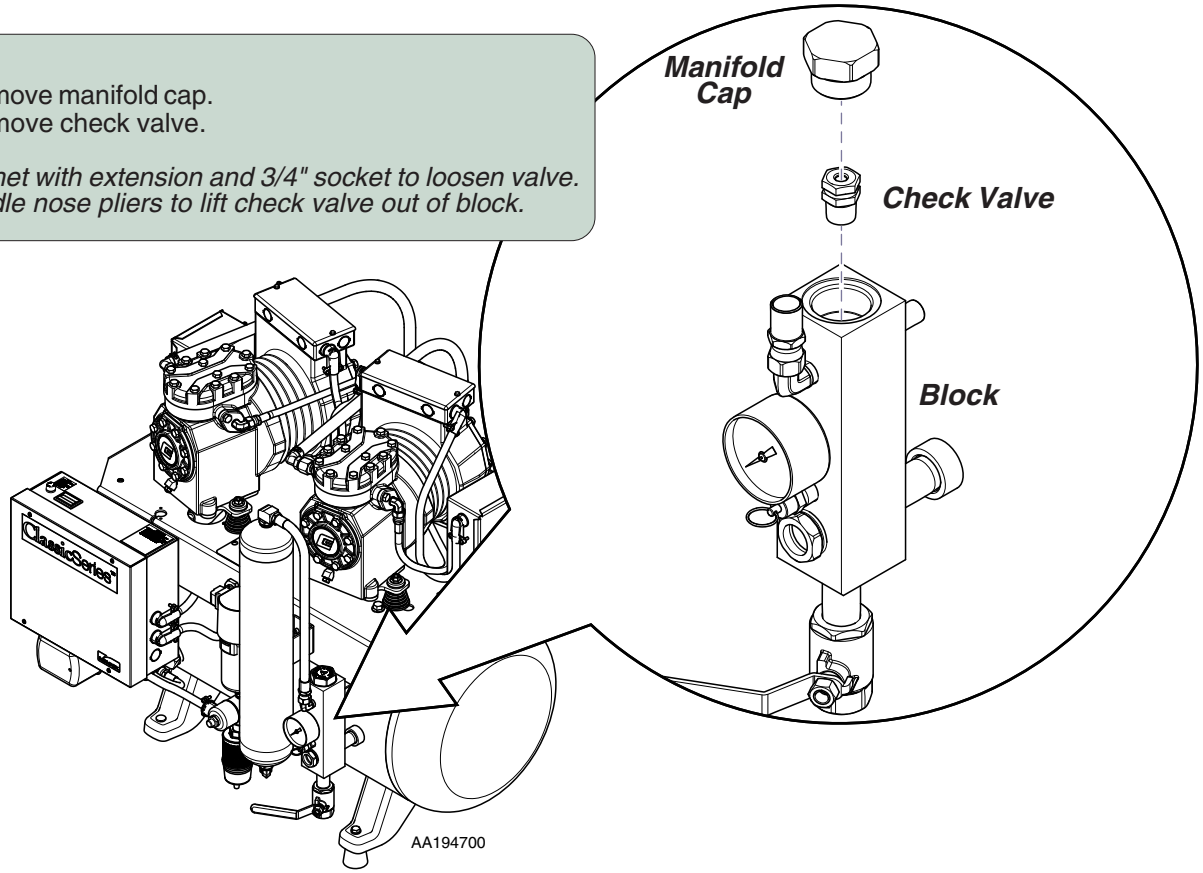
Removal
Step 3: Remove manifold cap.
Remove check valve.

Note: Use ratchet with extension and 3/4" socket to loosen valve.
Use needle nose pliers to lift check valve out of block.

Refer To: Go To Page:
Exploded Views / Part Numbers:
ClassicSeries® Models E-2
PowerAir® Models E-3

Installation
Step 1: Install check valve into block.
Replace manifold cap.

Note: Use ratchet with extension and 3/4" socket to tighten valve.



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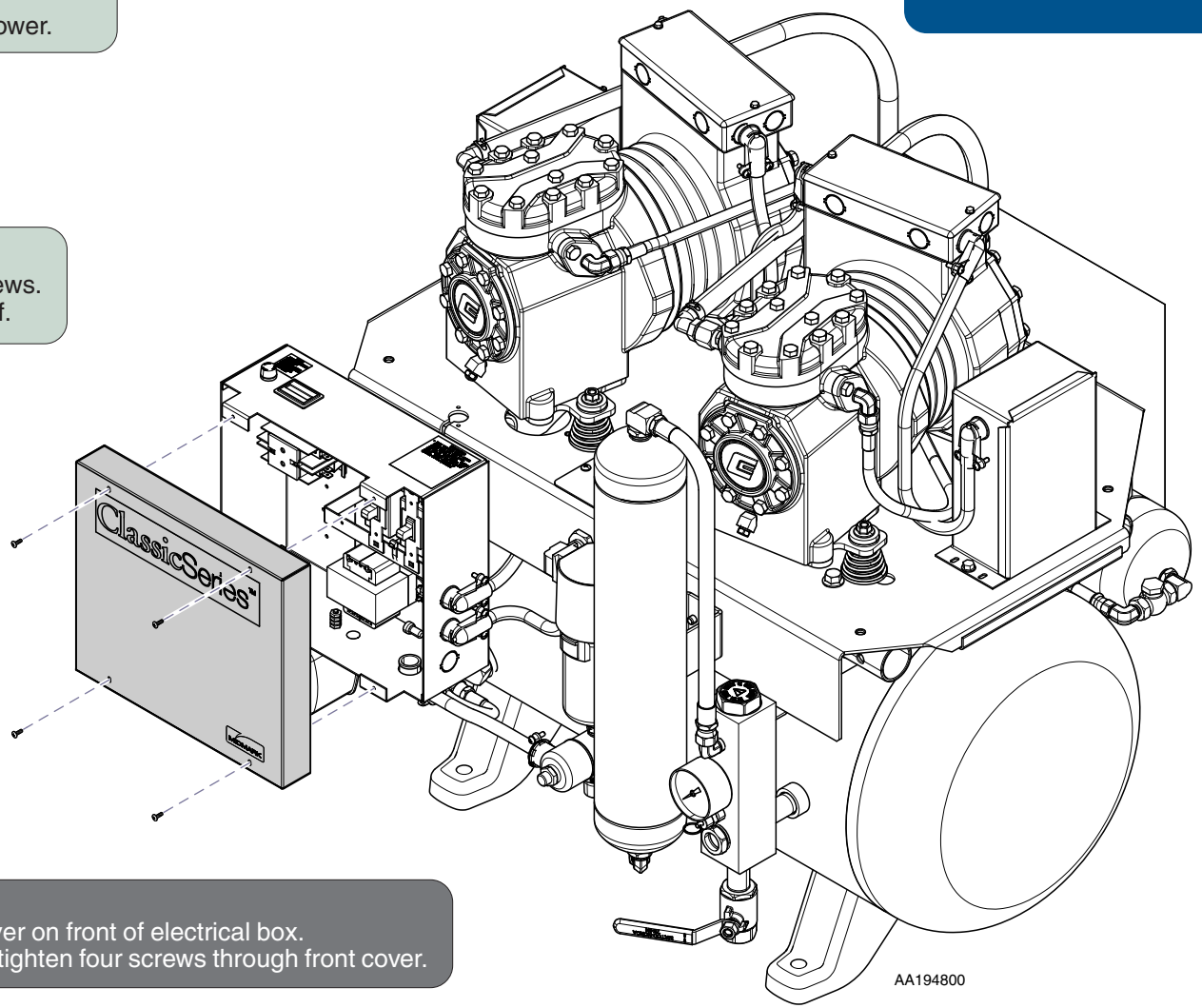
Electrical Box Cover

Removal/Installation

Refer To: **Go To Page:**
Exploded Views / Part Numbers:
ClassicSeries® Models E-2
PowerAir® Models E-3

Removal
Step 1: Disconnect power.

Removal
Step 2: Remove screws.
Pull cover off.



Installation
Step 1: Secure cover on front of electrical box.
Install and tighten four screws through front cover.

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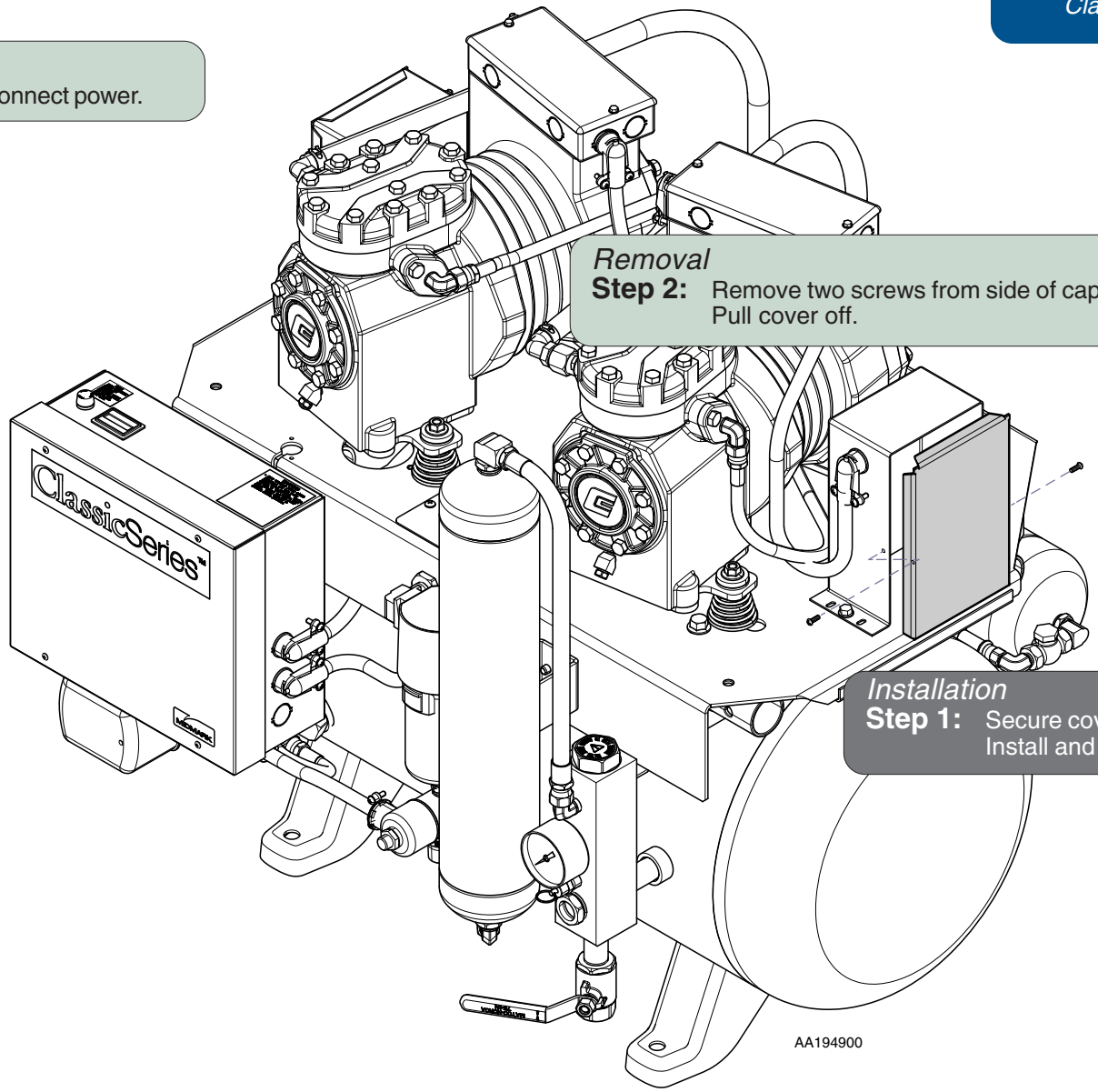
Access Procedures

Capacitor/Relay Box (Lubricated Compressors)

Removal/ Installation

Refer To: Go To Page:
Exploded Views / Part Numbers:
ClassicSeries® Models E-2

Removal
Step 1: Disconnect power.



Removal
Step 2: Remove two screws from side of capacitor/relay box. Pull cover off.

Installation
Step 1: Secure cover on front of capacitor/relay box. Install and tighten two screws through side of cover.

Capacitor / Relay Box

Models: / ***Serial Numbers:***	***CL21 CL22*** *All*	***CL32 CL52*** *All*

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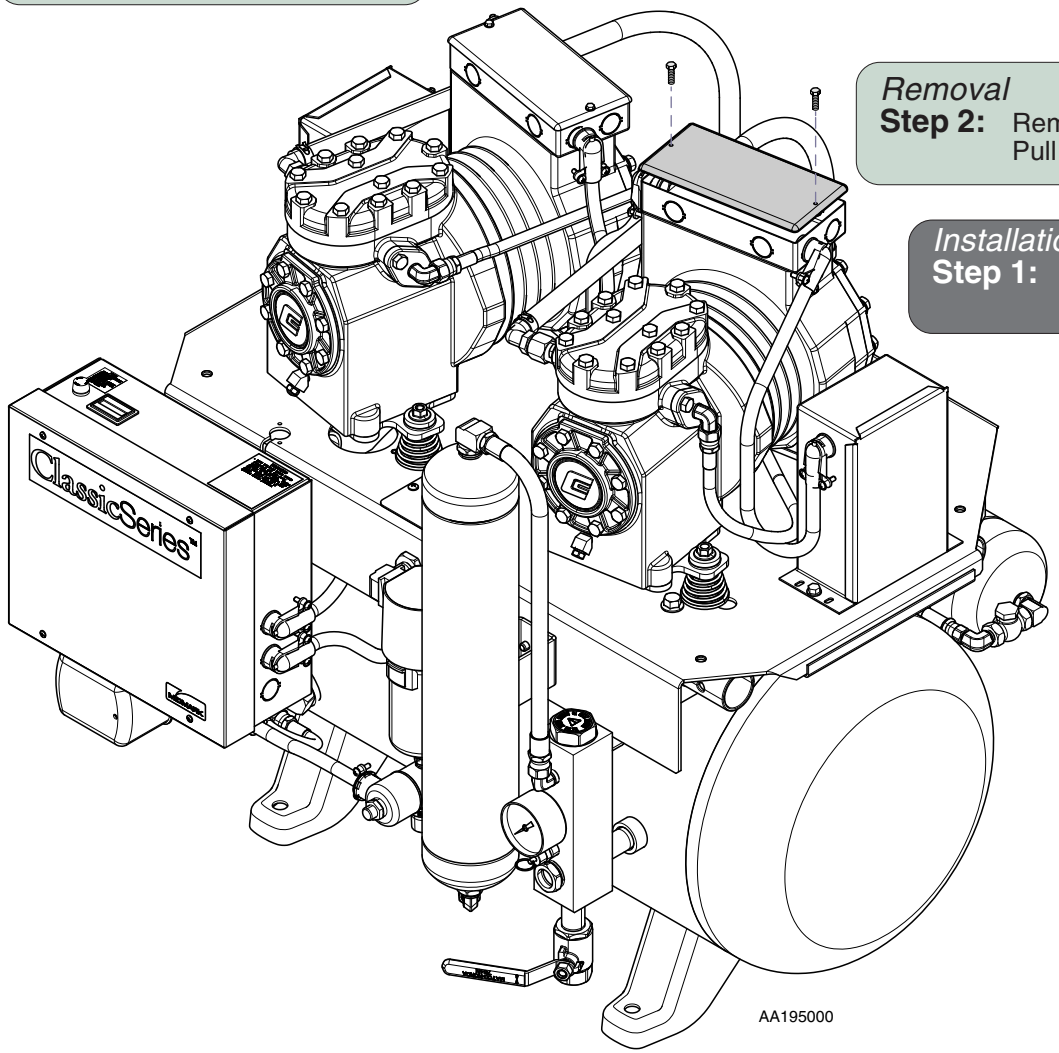
Access Procedures

Compressor Head Electrical Cover (Lubricated Compressors)

Removal/ Installation

Refer To: Go To Page:
Exploded Views / Part Numbers:
ClassicSeries® Models E-2

Removal
Step 1: Disconnect power.



Removal
Step 2: Remove two screws from top of compressor head electrical box. Pull cover off.

Installation
Step 1: Secure cover on top of compressor head electrical box. Install and tighten two screws through top of cover.

Models:	CL21 CL22	CL32 CL52
Serial Numbers:	All	All

Compressor Head Electrical Box

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Access Procedures

Sound Cover Electrical Box Cover (accessory)

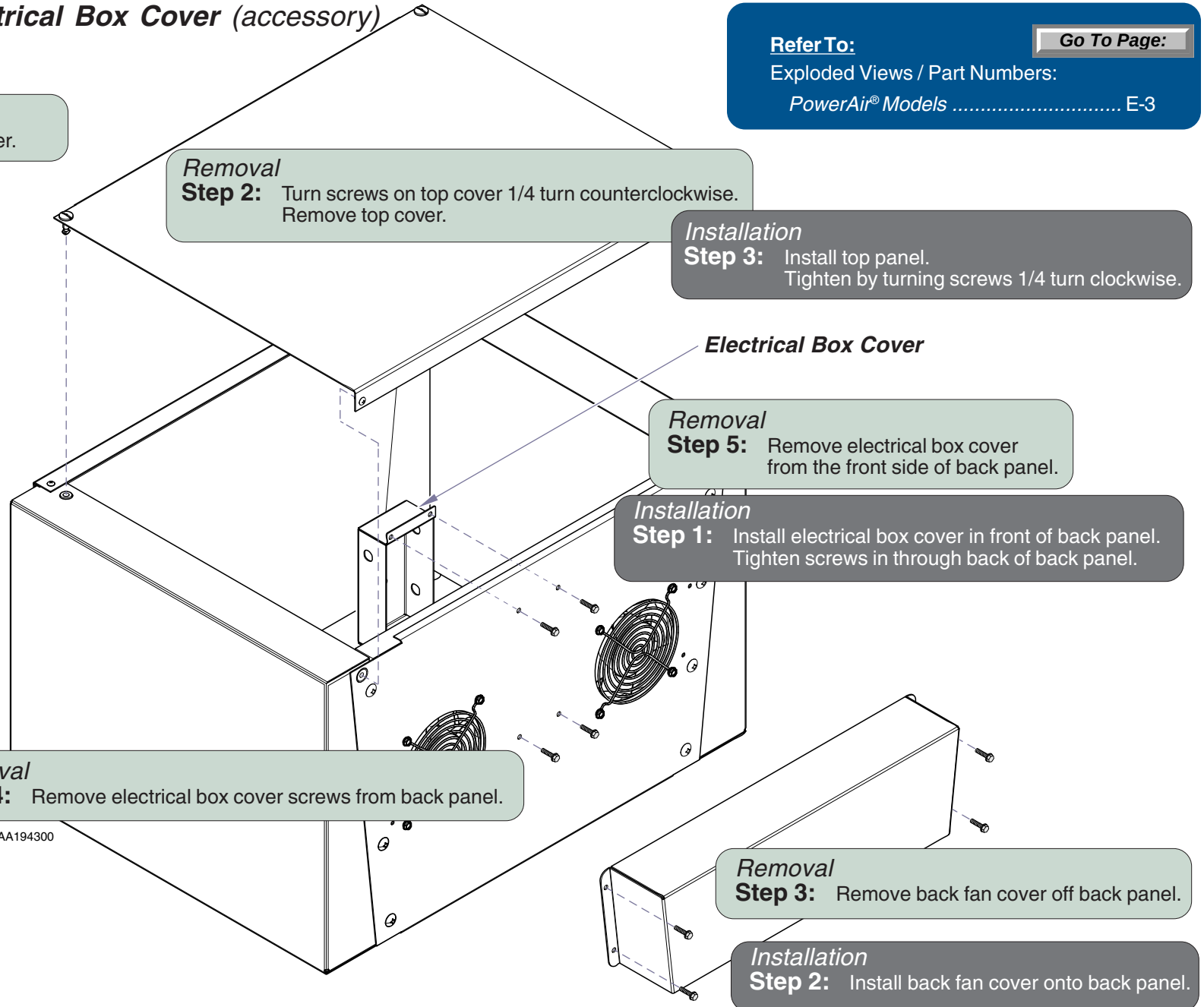
Removal/ Installation

Removal
Step 1: Disconnect power.

Removal
Step 2: Turn screws on top cover 1/4 turn counterclockwise. Remove top cover.

Installation
Step 3: Install top panel. Tighten by turning screws 1/4 turn clockwise.

Refer To: Go To Page:
Exploded Views / Part Numbers:
PowerAir® Models E-3



Removal
Step 5: Remove electrical box cover from the front side of back panel.

Installation
Step 1: Install electrical box cover in front of back panel. Tighten screws in through back of back panel.

Removal
Step 4: Remove electrical box cover screws from back panel.

Removal
Step 3: Remove back fan cover off back panel.

Installation
Step 2: Install back fan cover onto back panel.

Sound Cover Electrical Box Cover

Models: / ***Serial Numbers:***	***P21*** *All*	***P22*** *All*	***P32*** *All*	***P52*** *All*	***P72*** *All*

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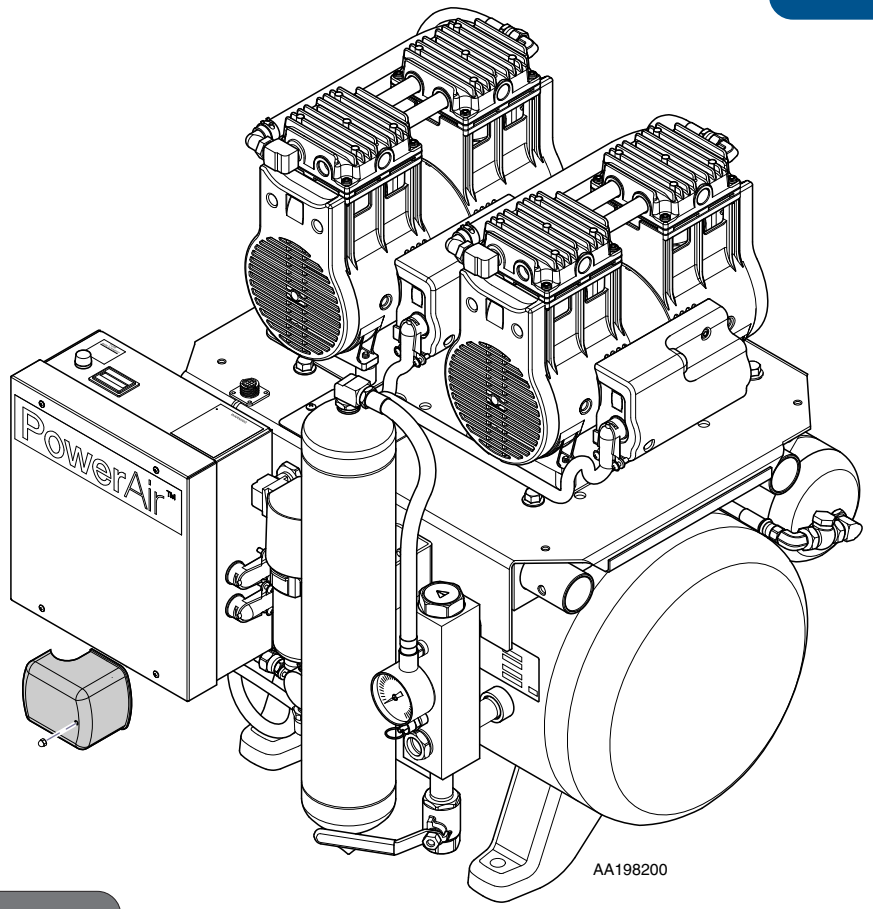
Access Procedures

Pressure Switch Cover

Removal/Installation

Refer To: Go To Page:
Exploded Views / Part Numbers:
ClassicSeries® Models E-2
PowerAir® Models E-3

Removal
Step 1: Disconnect power.



Removal
Step 2: Remove cap nut.
Pull cover off.

Installation
Step 1: Place cover on pressure switch.
Secure cap nut.

Models: *All*
Serial Numbers:

Pressure Switch Cover

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Section D

Wiring Diagrams

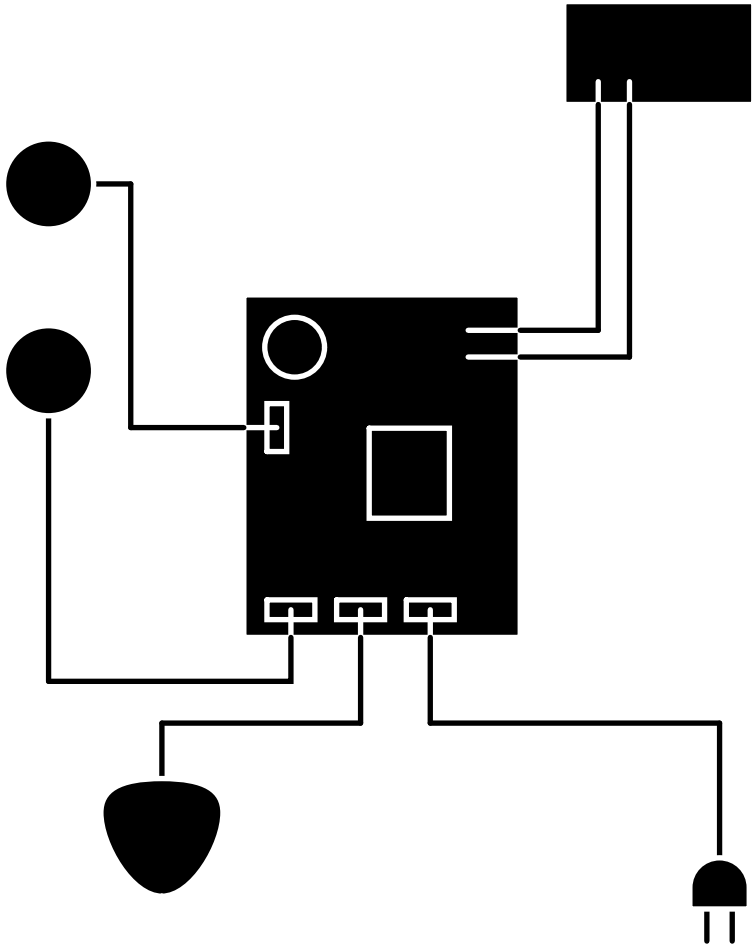
Model — **Go To Page:**

ClassicSeries® Lubricated

CL21 ..... D-2
CL22 ..... D-5
CL32 ..... D-8
CL52 ..... D-11

PowerAir® - Oil Less

P21 ..... D-14
P22 ..... D-17
P32 ..... D-20
P52 ..... D-23
P72 ..... D-26



Click GO TO PAGE: button (then enter desired page number) to view any page in this document.

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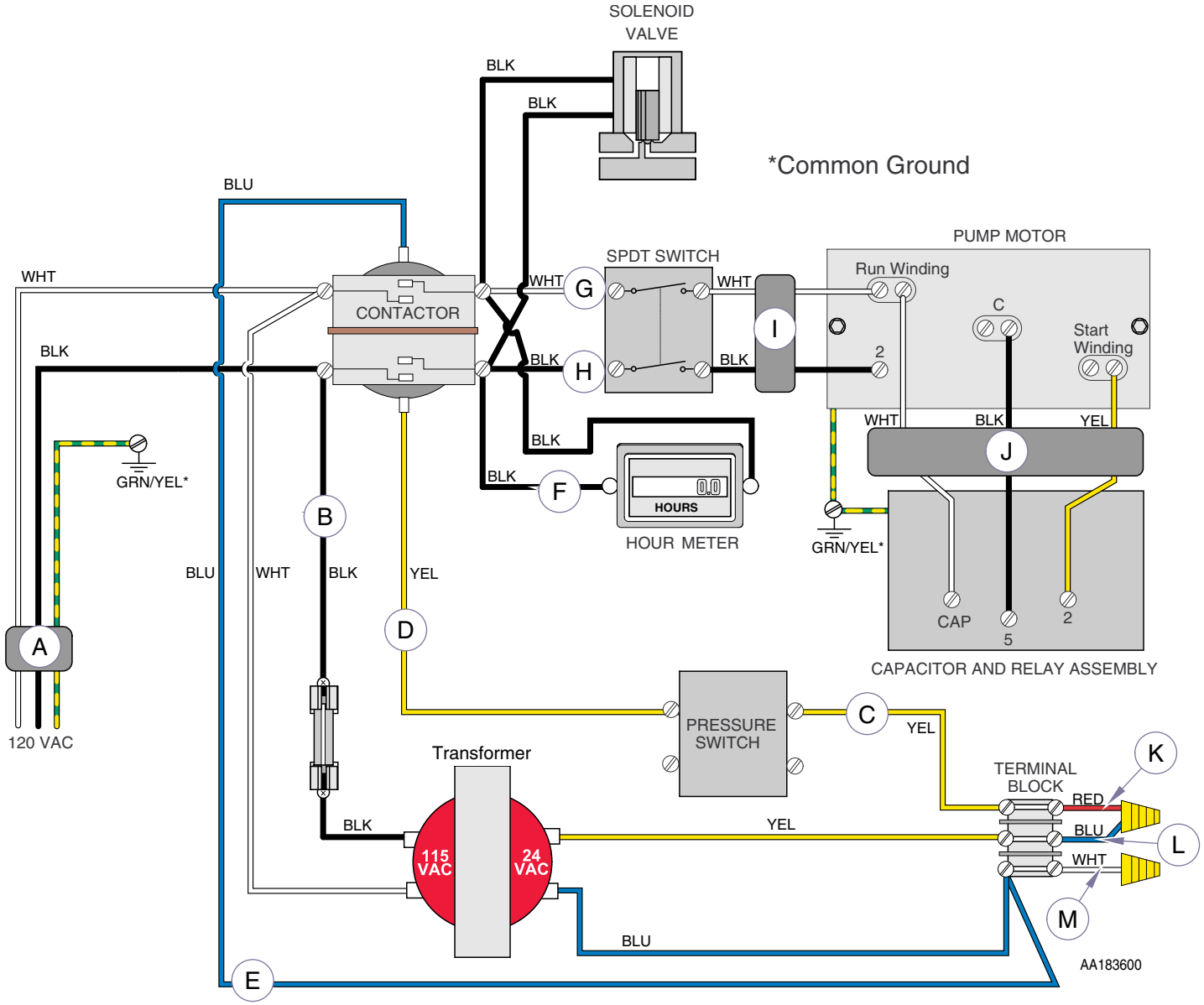
Wiring Diagrams

ClassicSeries® Lubricated Compressor
Single - 115 Volts

Wire Harness	From:	To:	Part Number
A	Power Source	Contactor	62983000
B	Contactor	Fuse	62979000
C	Pressure Switch	Terminal Block	62979100
D	Pressure Switch	Contactor	62983700
E	Terminal Block	Contactor	62979200
F	Hour Meter Cable	Contactor	62979300
G	Contactor	SPDT Switch	62982300
H	Contactor	SPDT Switch	62982400
I	SPDT Switch	Motor	62982900
J	Motor	Capacitor and Relay	64884701
K	Termainal Block	Low Voltage	62983500
L	Termainal Block	Low Voltage	62983600
M	Termainal Block	Low Voltage	62983400



Models: CL21
Serial Numbers: 0701L210001 thru 0901L210370

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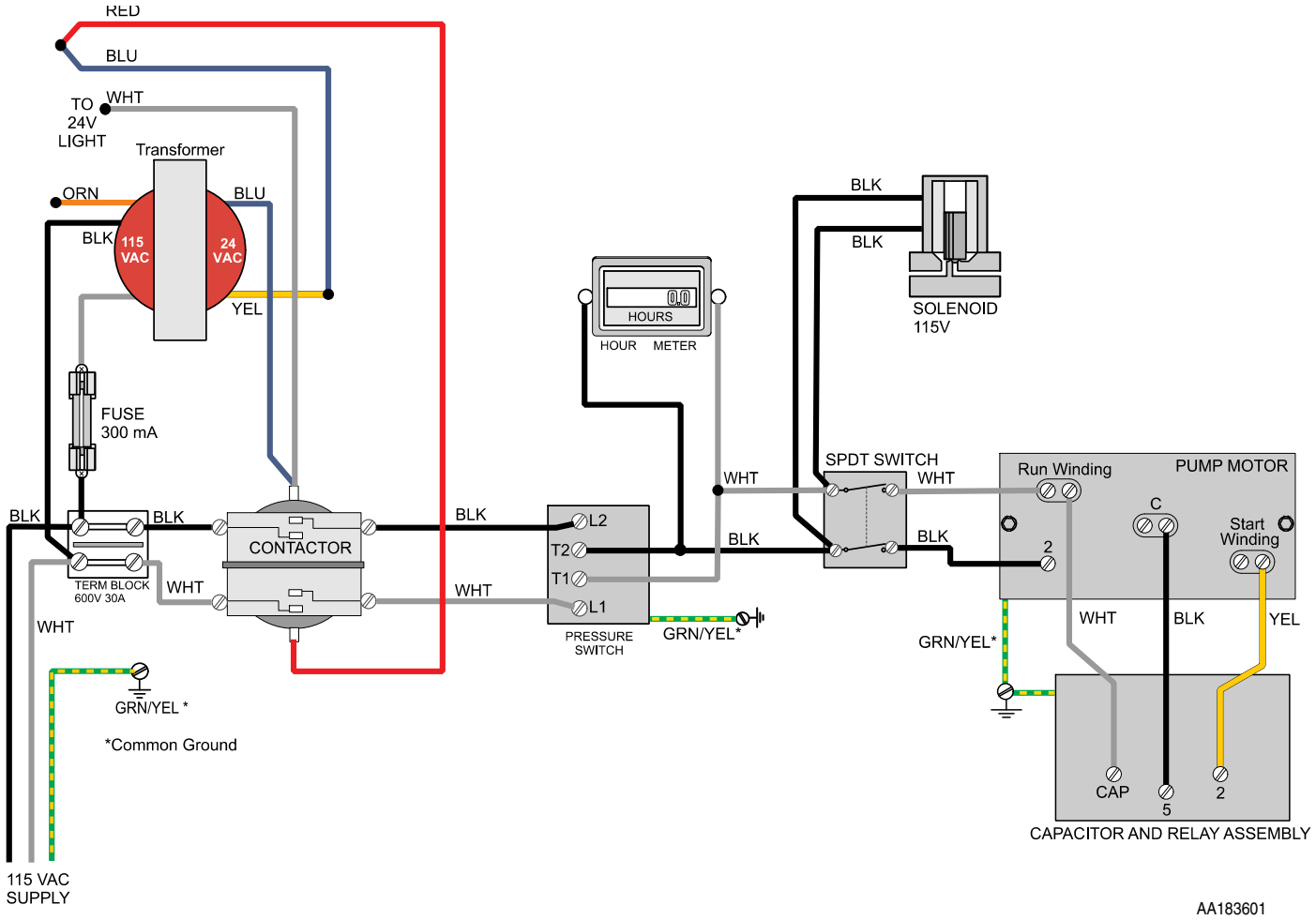
ClassicSeries® Lubricated Compressor
Single - 115 Volts



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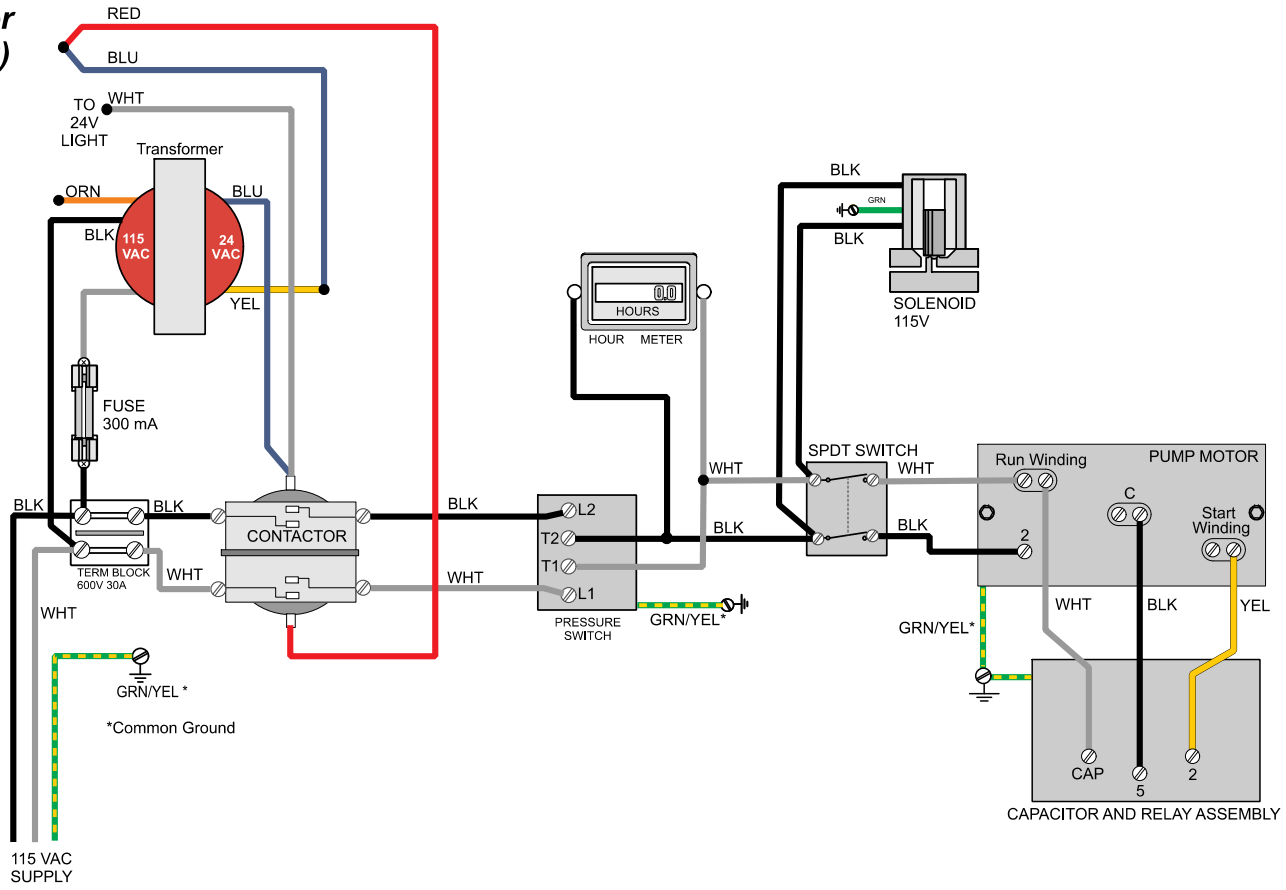
Wiring Diagrams

ClassicSeries™
Lubricated Compressor
CL21 (Single - 115 VAC)



20228900 Rev B

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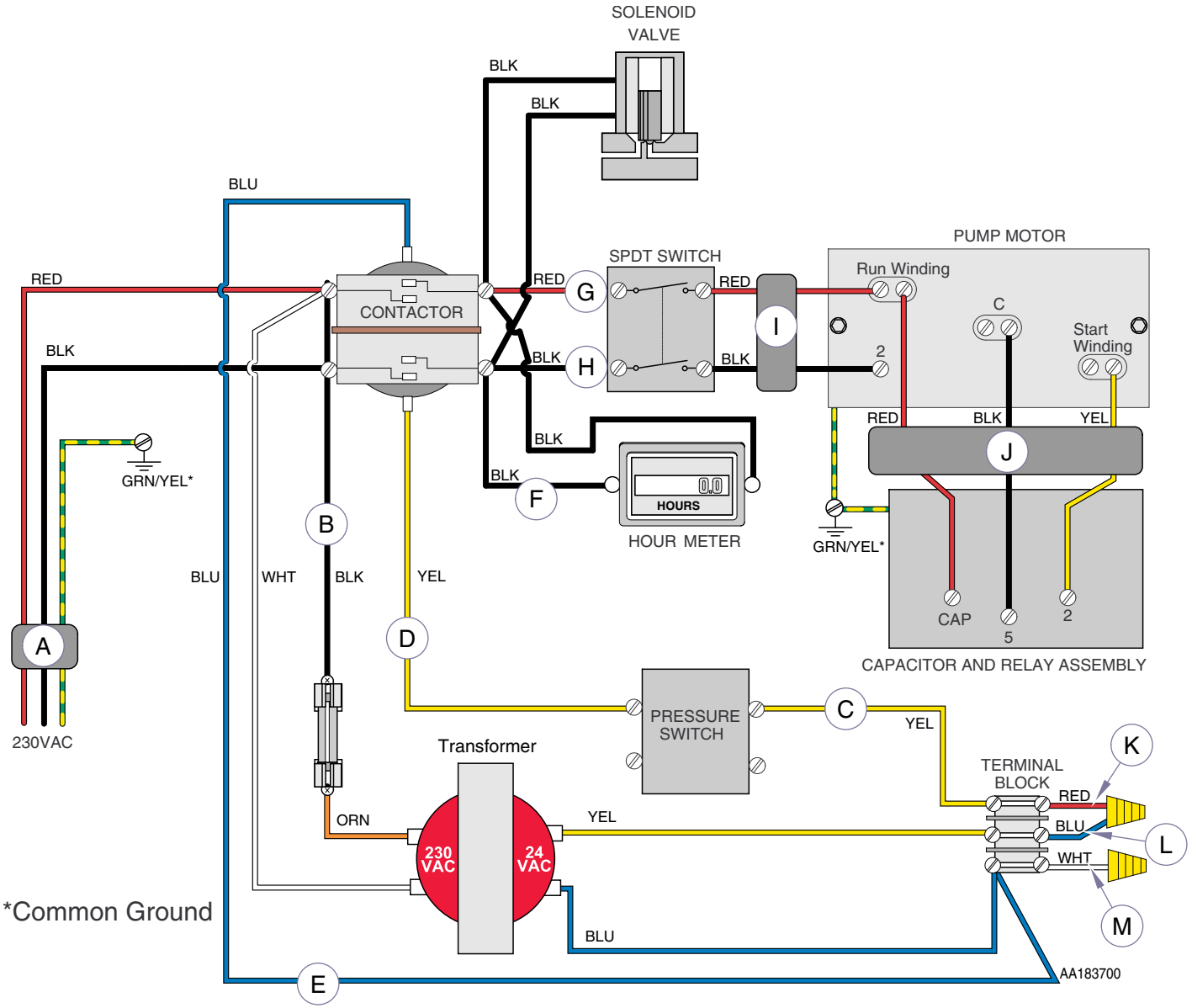
Wiring Diagrams

ClassicSeries® Lubricated Compressor
Single - 230 Volts



Wire Harness	From:	To:	Part Number
A	Power Source	Contactor	**62978900**
B	Contactor	Fuse	**62979000**
C	Pressure Switch	Terminal Block	**62979100**
D	Pressure Switch	Contactor	**62983700**
E	Terminal Block	Contactor	**62979200**
F	Hour Meter Cable	Contactor	**62979300**
G	Contactor	SPDT Switch	**62982500**
H	Contactor	SPDT Switch	**62982400**
I	SPDT Switch	Motor	**62982600**
J	Motor	Capacitor and Relay	**64884702**
K	Terminal Block	Low Voltage	**62983500**
L	Terminal Block	Low Voltage	**62983600**
M	Terminal Block	Low Voltage	**62983400**

Models: ***CL22***
Serial Numbers: *0701L220001 thru 0903L220294*

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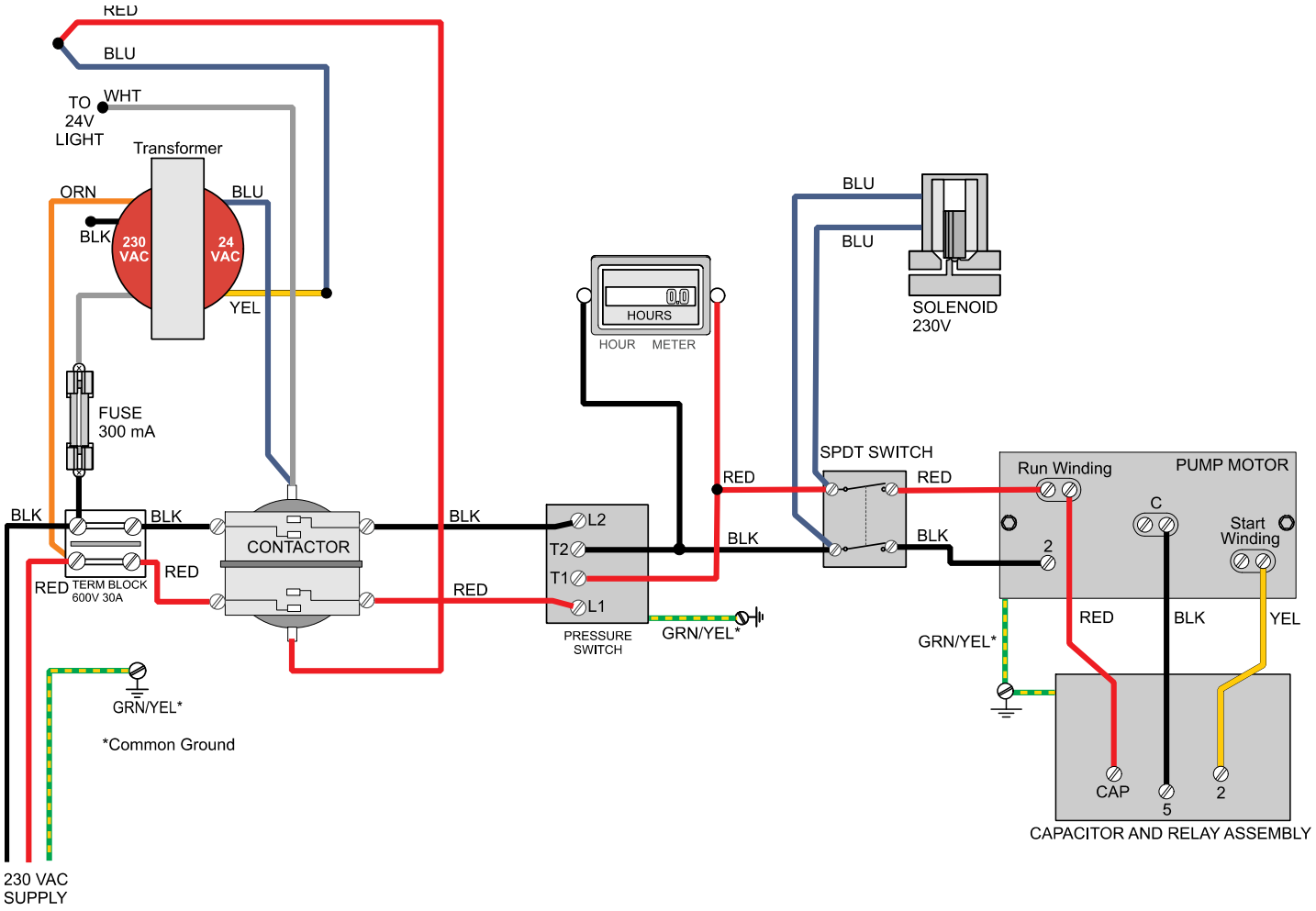
Wiring Diagrams

ClassicSeries® Lubricated Compressor
Single - 230 Volts



AA183701

Models:	CL22	CL22
Serial Numbers:	0903L220296 thru 0907L220318	V785000 thru V795558

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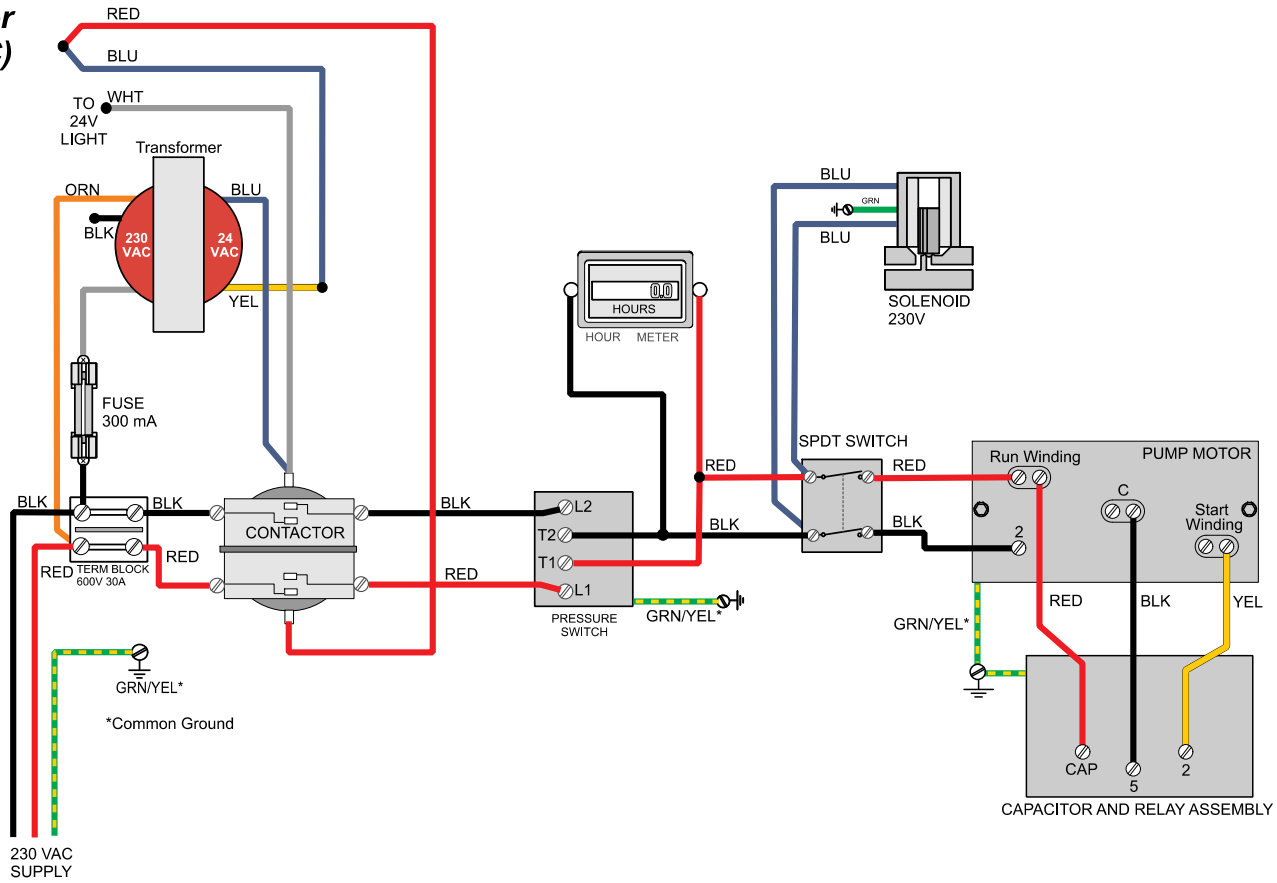
Wiring Diagrams

ClassicSeries™
Lubricated Compressor
CL22 (Single - 230 VAC)



20229000 Rev B

Models:	CL22	CL22
Serial Numbers:	V795559 thru Present	0907L220319 thru Present

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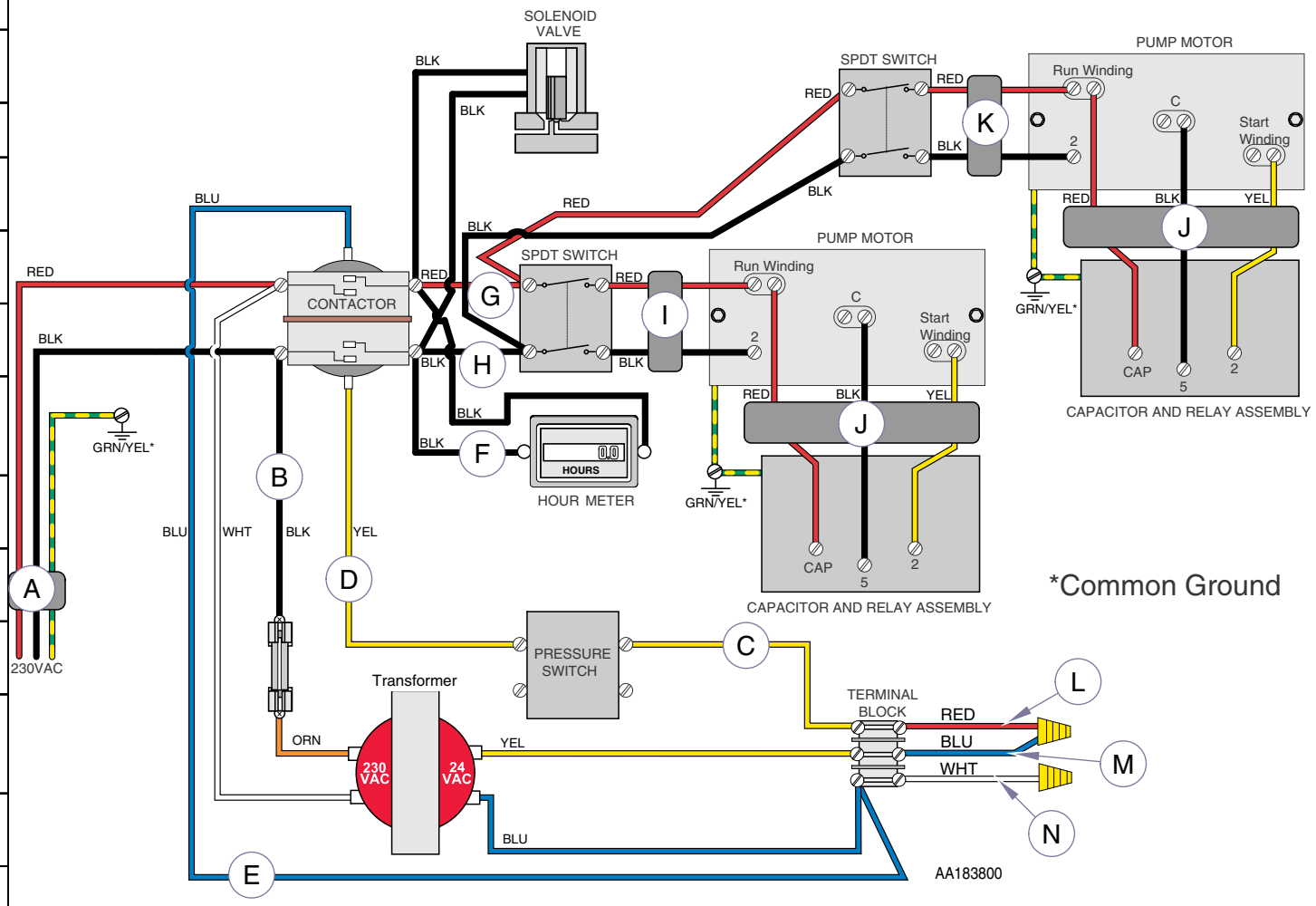
Wiring Diagrams

ClassicSeries® Lubricated Compressor
Dual - 230 Volts

Wire Harness	From:	To:	Part Number
A	Power Source	Contactor	62978900
B	Contactor	Fuse	62979000
C	Pressure Switch	Terminal Block	62979100
D	Pressure Switch	Contactor	62983700
E	Terminal Block	Contactor	62979200
F	Hour Meter Cable	Contactor	62979300
G	Contactor	SPDT Switch	62982500
H	Contactor	SPDT Switch	62982400
I	SPDT Switch	Motor	62982600
J	Motor	Capacitor and Relay	64884702
K	Motor	SPDT Switch	62982700
L	Terminal Block	Low Voltage	62983500
M	Terminal Block	Low Voltage	62983600
N	Terminal Block	Low Voltage	62983400



Models: CL32
Serial Numbers: 0701L320001 thru 0901L320807

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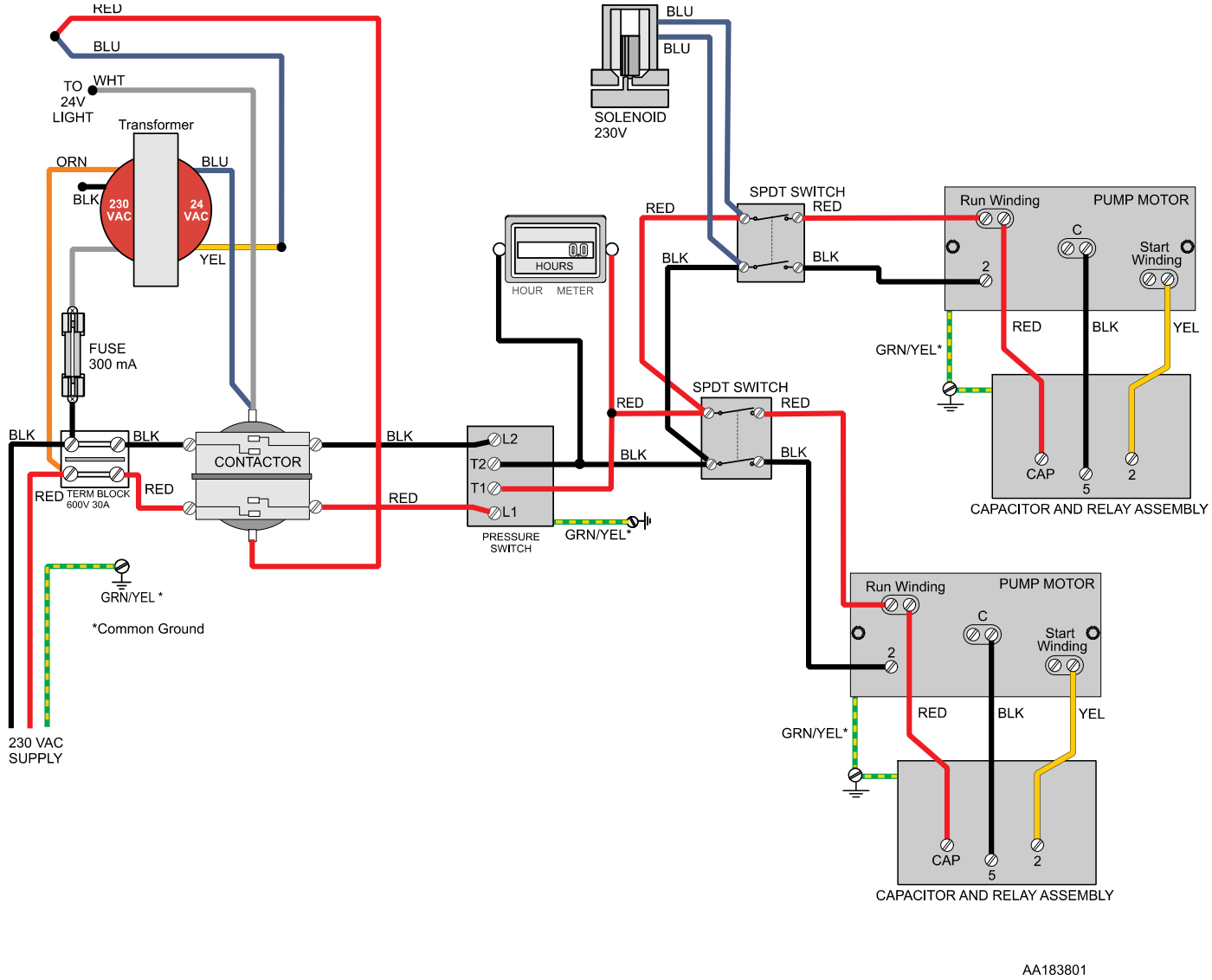
ClassicSeries® Lubricated Compressor
Dual - 230 Volts



AA183801

Models:	CL32	CL32
Serial Numbers:	0901L320813 thru 0906L320846	V785000 thru V795281

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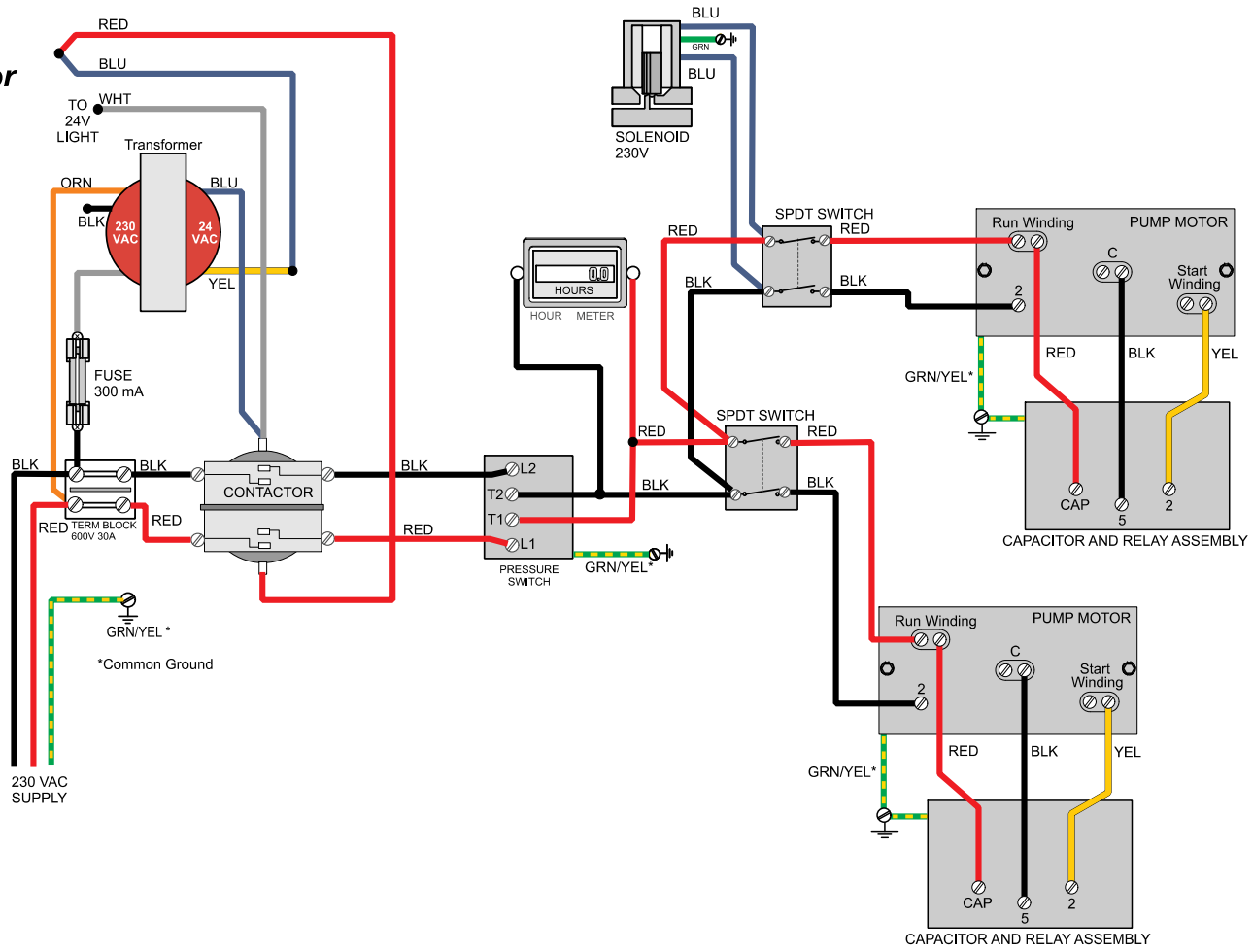
Wiring Diagrams

ClassicSeries™
Lubricated Compressor
CL32 (Twin - 230 VAC)



20229100 Rev B

Models: / Serial Numbers:	CL32	CL32
	V795282 thru Present	0906L320847 thru Present

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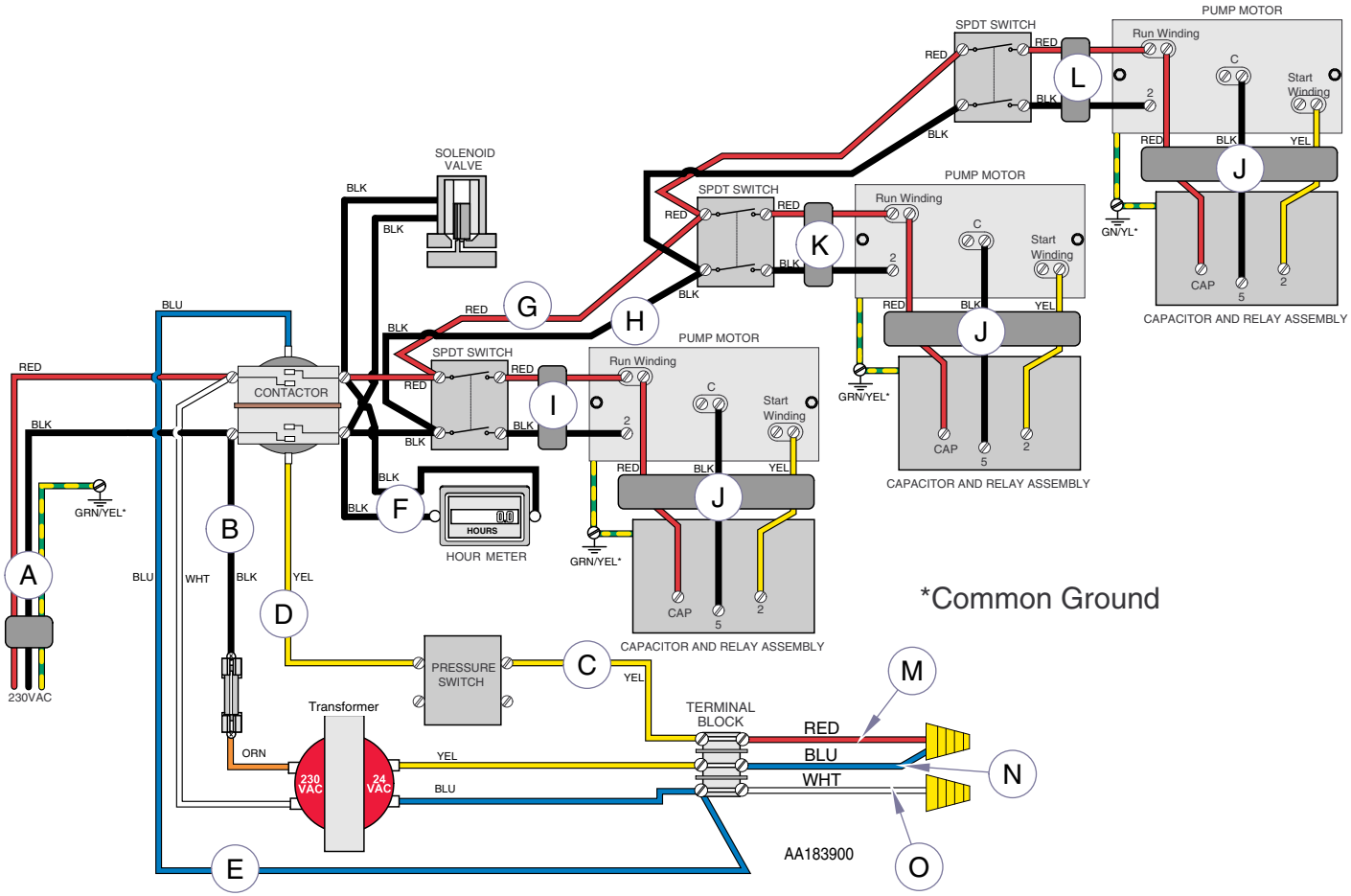
Wiring Diagrams

ClassicSeries® Lubricated Compressor
Triple - 230 Volts



Wire Harness	From:	To:	Part Number
A	Power Source	Contactor	**62978900**
B	Contactor	Fuse	**62979000**
C	Pressure Switch	Terminal Block	**62979100**
D	Pressure Switch	Contactor	**62983700**
E	Terminal Block	Contactor	**62979200**
F	Hour Meter Cable	Contactor	**62979300**
G	Contactor	SPDT Switch	**62982500**
H	Contactor	SPDT Switch	**62982400**
I	SPDT Switch	Motor	**62982600**
J	Motor 1	Capacitor and Relay	**64884702**
K	Motor 2	SPDT Switch	**62982700**
L	Motor 3	SPDT Switch	**62982800**
M	Terminal Block	Low Voltage	**62983500**
N	Terminal Block	Low Voltage	**62983600**
O	Terminal Block	Low Voltage	**62983400**

Models: ***CL52***
Serial Numbers: *0701L520001 thru 0810CL520124*

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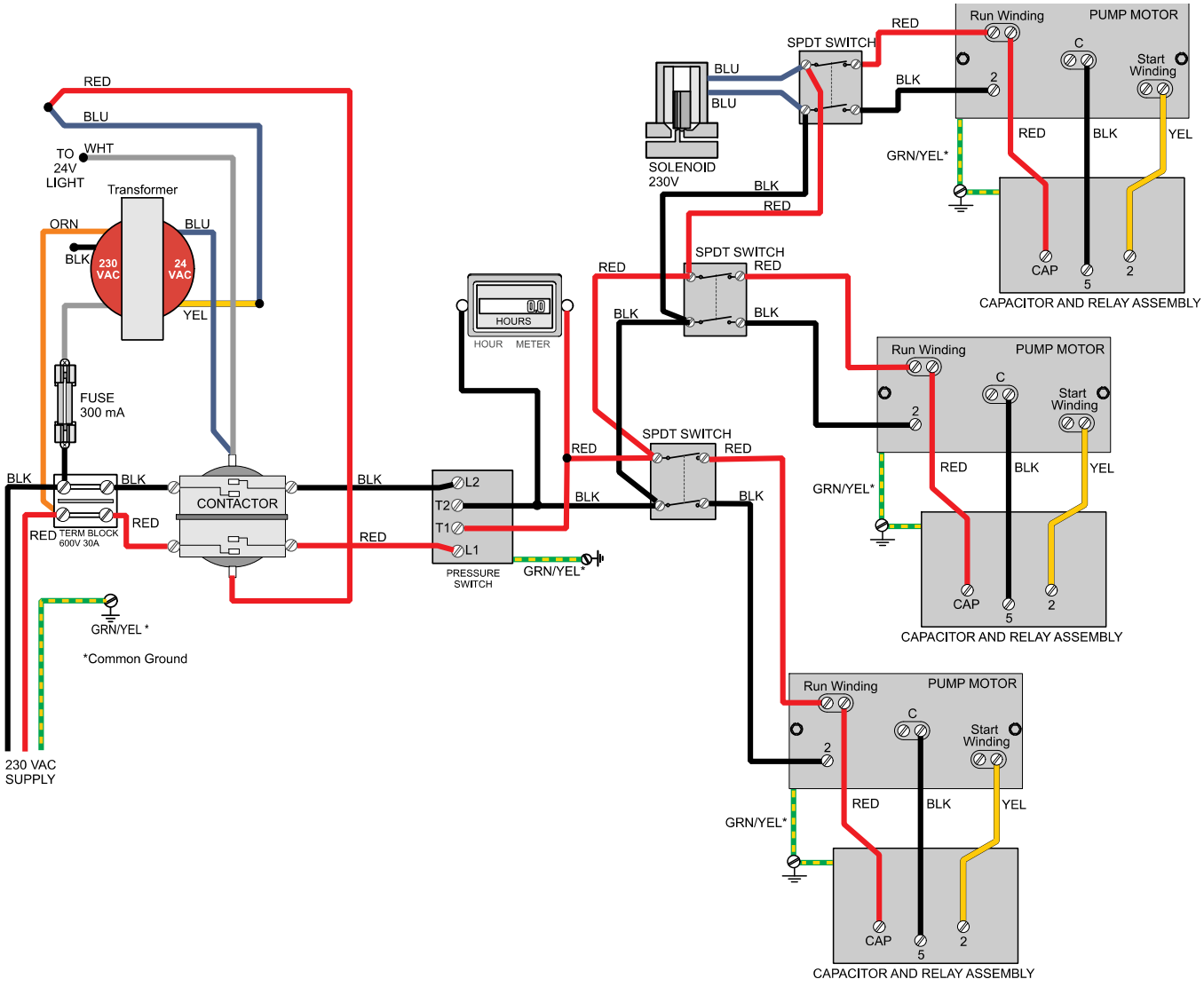
Wiring Diagrams

ClassicSeries® Lubricated Compressor
Triple - 230 Volts



AA183901

Models: / Serial Numbers:	CL52	CL52
	0810L520126 thru 0907L520142	V785000 thru V795341

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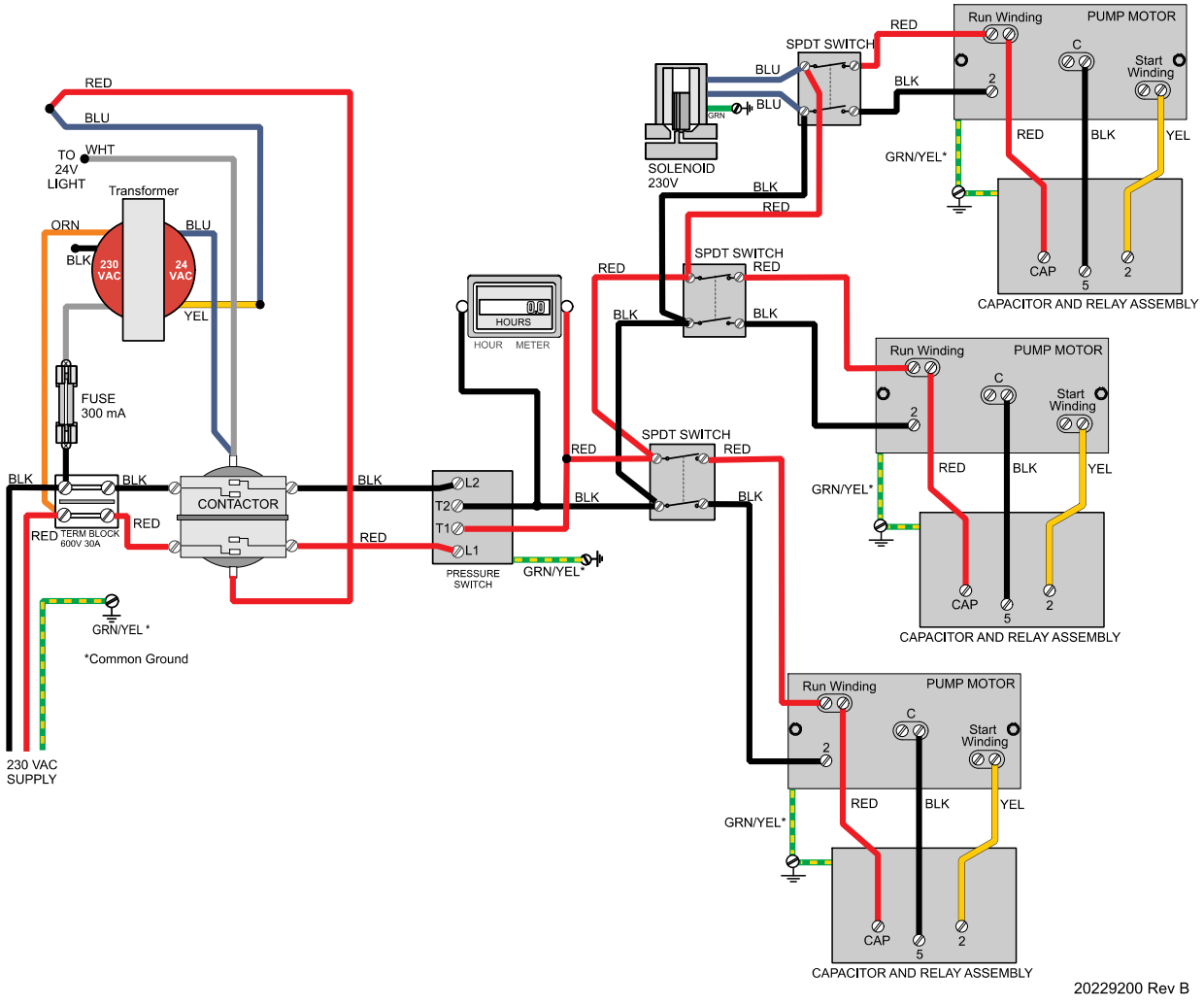
Wiring Diagrams

ClassicSeries™ Lubricated Compressor CL52 (Triple - 230 VAC)



20229200 Rev B

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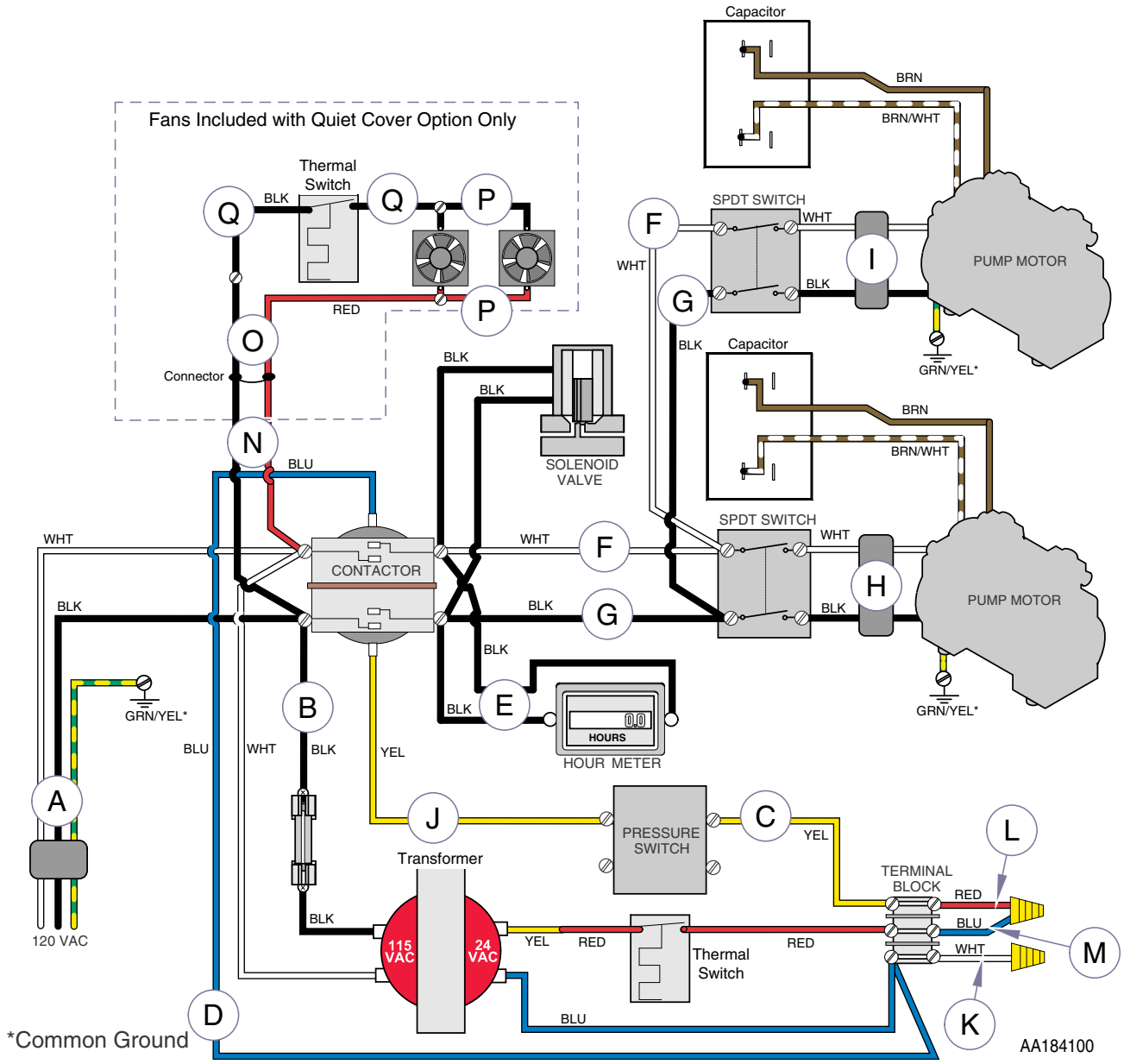
Wiring Diagrams

PowerAir® Oil Less Compressor Dual - 115 Volts

Wire Harness	From:	To:	Part Number
A	Power Source	Contactor	62983000
B	Contactor	Fuse	62979000
C	Pressure Switch	Terminal Block	62979100
D	Contactor	Terminal Block	62979200
E	Hour Meter Cable	Contactor	62979300
F	SPDT Switch	SPDT Switch	62982300
G	SPDT Switch	SPDT Switch	62982400
H	Motor (Single)	SPDT Switch	62985000
I	SPDT Switch	Motor (Dual)	62984700
J	Contactor	Pressure Switch	62983700
K	Terminal Block	Low Voltage	62983400
L	Terminal Block	Low Voltage	62983500
M	Terminal Block	Low Voltage	62983600
N	Compressor Plug	Contactor	62984000
O	Quiet Cover Plug	Terminal Block & Thermal Switch	62984500
P	Fan Power Cord	Terminal Block	62984600
Q	Thermal Switch	Terminal Block	62983900



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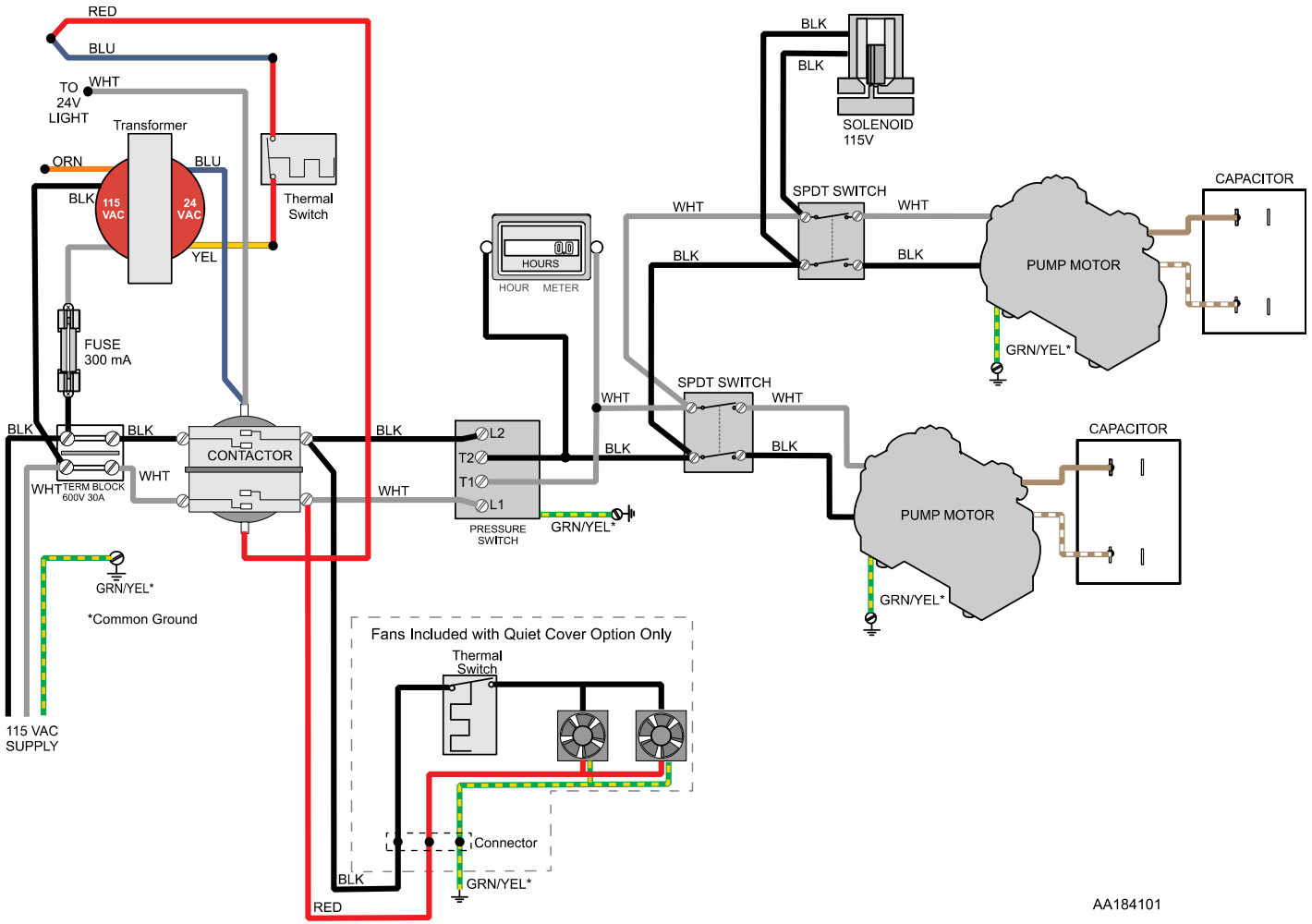
PowerAir® Oil Less Compressor
Dual - 115 Volts



Models:	P21	P21
Serial Numbers:	0904P210365 thru Present	V785000 thru V795263

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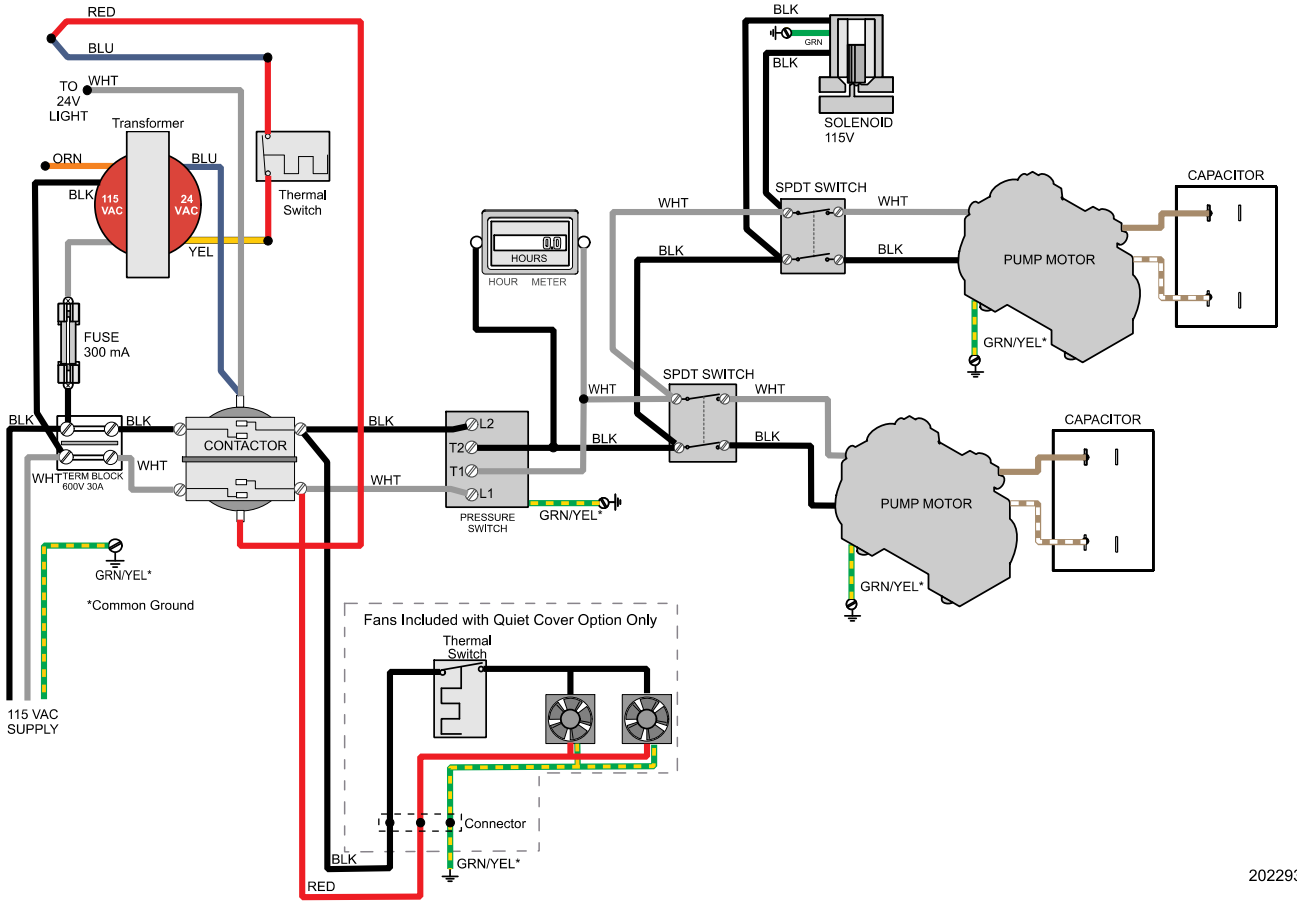
Wiring Diagrams

PowerAir™
Oil-Less Compressor
P21 (Twin - 115 VAC)



20229300 Rev B

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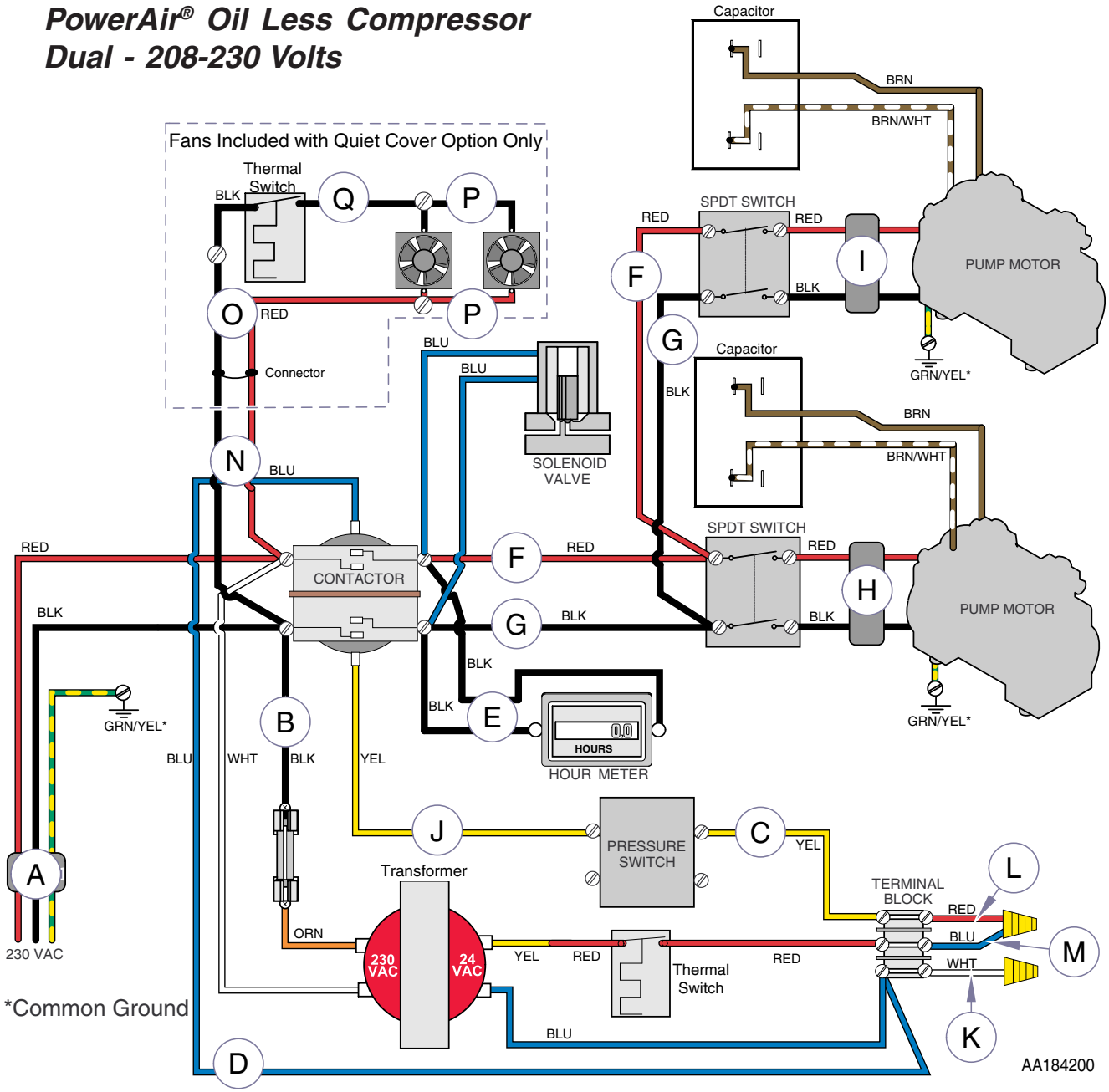
Wiring Diagrams

PowerAir® Oil Less Compressor Dual - 208-230 Volts



Wire Harness	From:	To:	Part Number
A	Power Source	Contactor	62978900
B	Contactor	Fuse	62979000
C	Pressure Switch	Terminal Block	62979100
D	Contactor	Terminal Block	62979200
E	Hour Meter Cable	Contactor	62979300
F	SPDT Switch	SPDT Switch	62982500
G	SPDT Switch	SPDT Switch	62982400
H	Motor (Single)	SPDT Switch	62985100
I	SPDT Switch	Motor (Dual)	62984800
J	Contactor	Pressure Switch	62983700
K	Terminal Block	Low Voltage	62983400
L	Terminal Block	Low Voltage	62983500
M	Terminal Block	Low Voltage	62983600
N	Compressor Plug	Contactor	62984000
O	Quiet Cover Plug	Terminal Block & Thermal Switch	62984500
P	Fan Power Cord	Terminal Block	62984600
Q	Thermal Switch	Terminal Block	62983900

Models: P22
Serial Numbers: 0703P220001 thru 0903P221139

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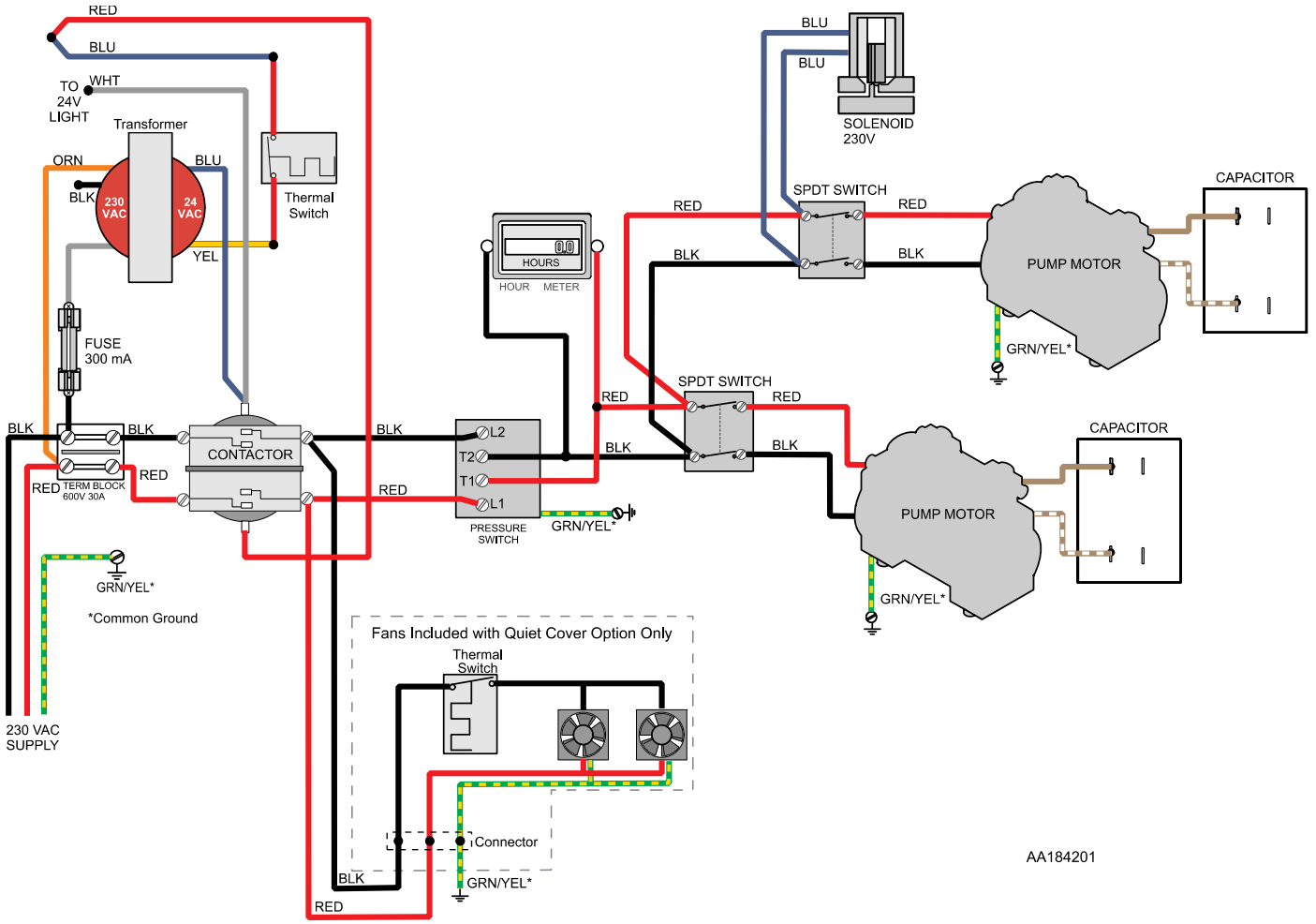
Wiring Diagrams

PowerAir® Oil Less Compressor
Dual - 208-230 Volts



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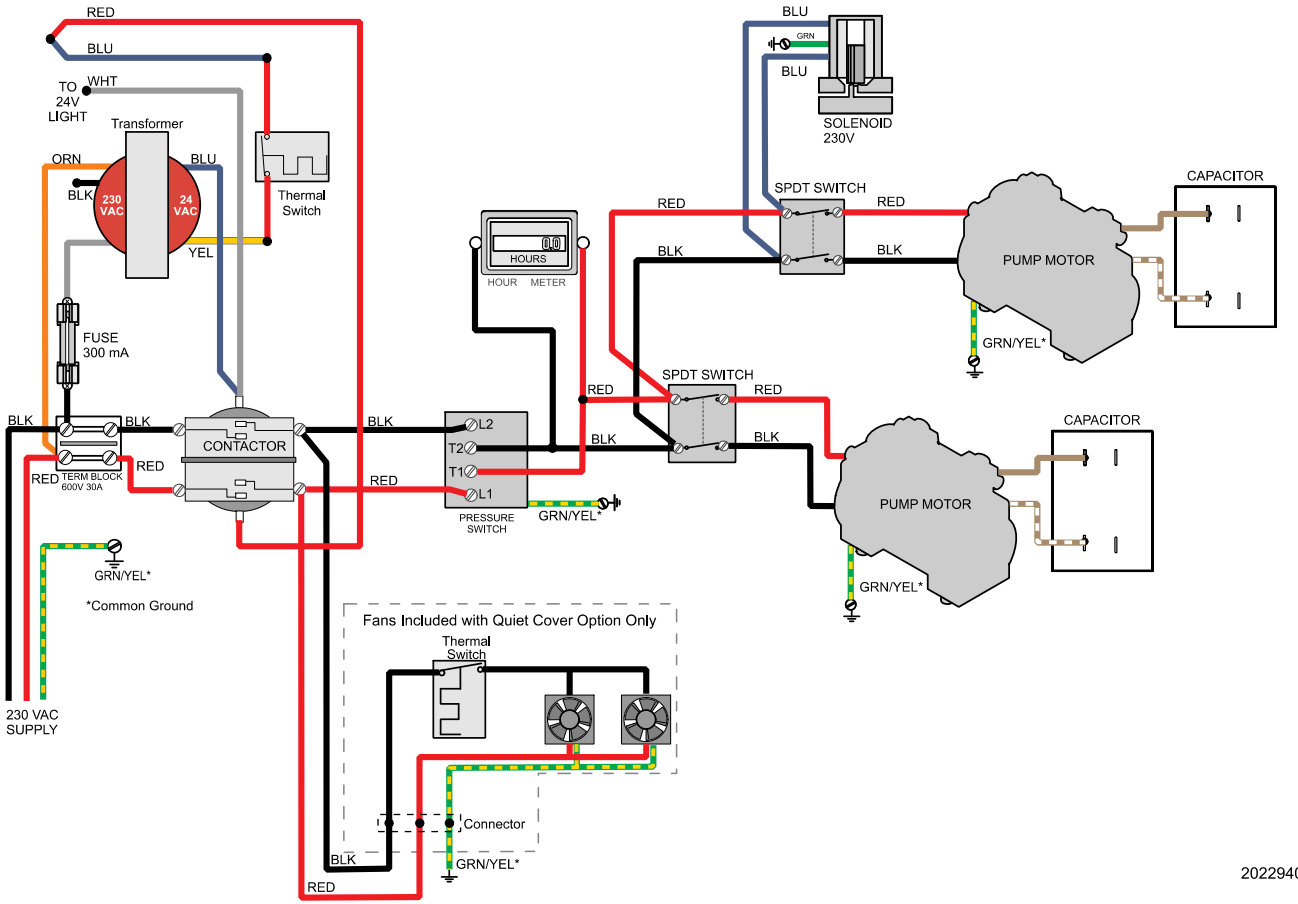
PowerAir™
Oil-Less Compressor
P22 (Twin - 208-230 VAC)



20229400 Rev B

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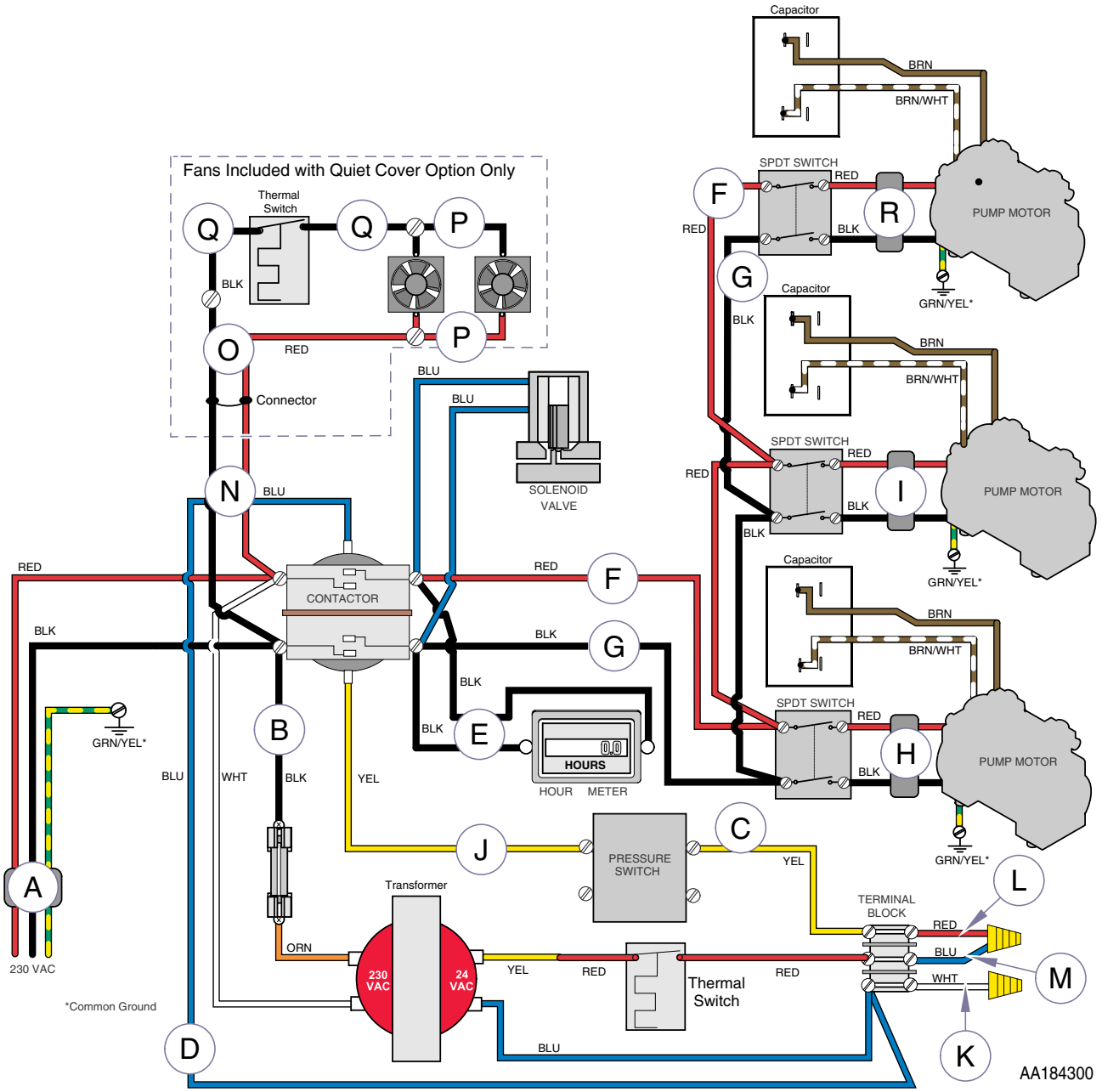
Wiring Diagrams

PowerAir™ Oil Less Compressor Triple- 208-230 Volts

Wire Harness	From:	To:	Part Number
A	Power Source	Contactor	62978900
B	Contactor	Fuse	62979000
C	Pressure Switch	Terminal Block	62979100
D	Contactor	Terminal Block	62979200
E	Hour Meter Cable	Contactor	62979300
F	SPDT Switch	SPDT Switch	62982500
G	SPDT Switch	SPDT Switch	62982400
H	Motor (Single)	SPDT Switch	62985100
I	SPDT Switch	Motor (Dual)	62984800
J	Contactor	Pressure Switch	62983700
K	Terminal Block	Low Voltage	62983400
L	Terminal Block	Low Voltage	62983500
M	Terminal Block	Low Voltage	62983600
N	Compressor Plug	Contactor	62984000
O	Quiet Cover Plug	Terminal Block & Thermal Switch	62984500
P	Fan Power Cord	Terminal Block	62984600
Q	Thermal Switch	Terminal Block	62983900
R	Motor (Triple)	SPDT Switch	62984900



Models: P32
Serial Numbers: 0703P320001 thru 0903P321137

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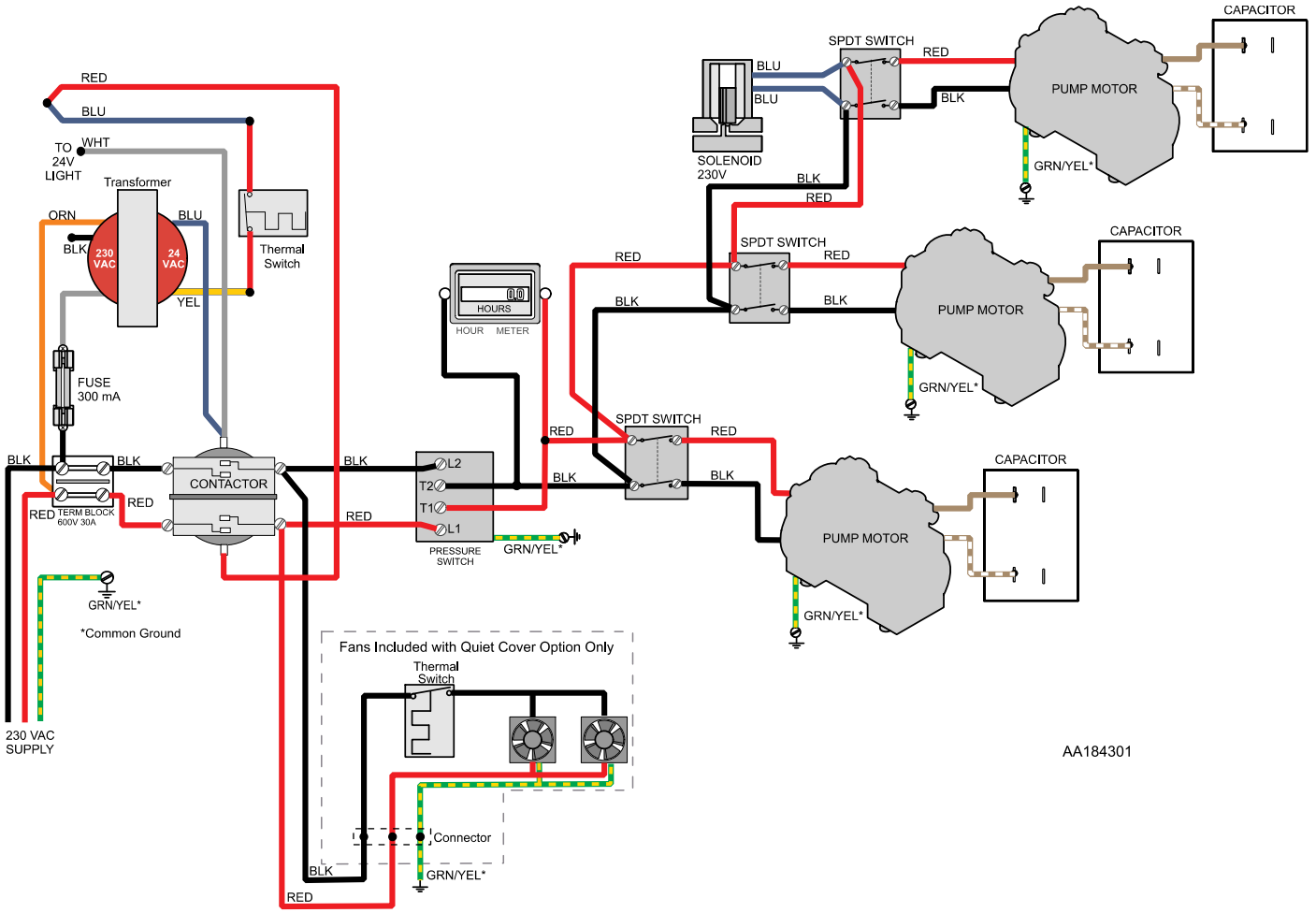
PowerAir® Oil Less Compressor
Triple- 208-230 Volts



Models:	P32	P32	P32
Serial Numbers:	0904P321145 thru 0909P321336	V785000 thru V795559	0909P321337 thru Present

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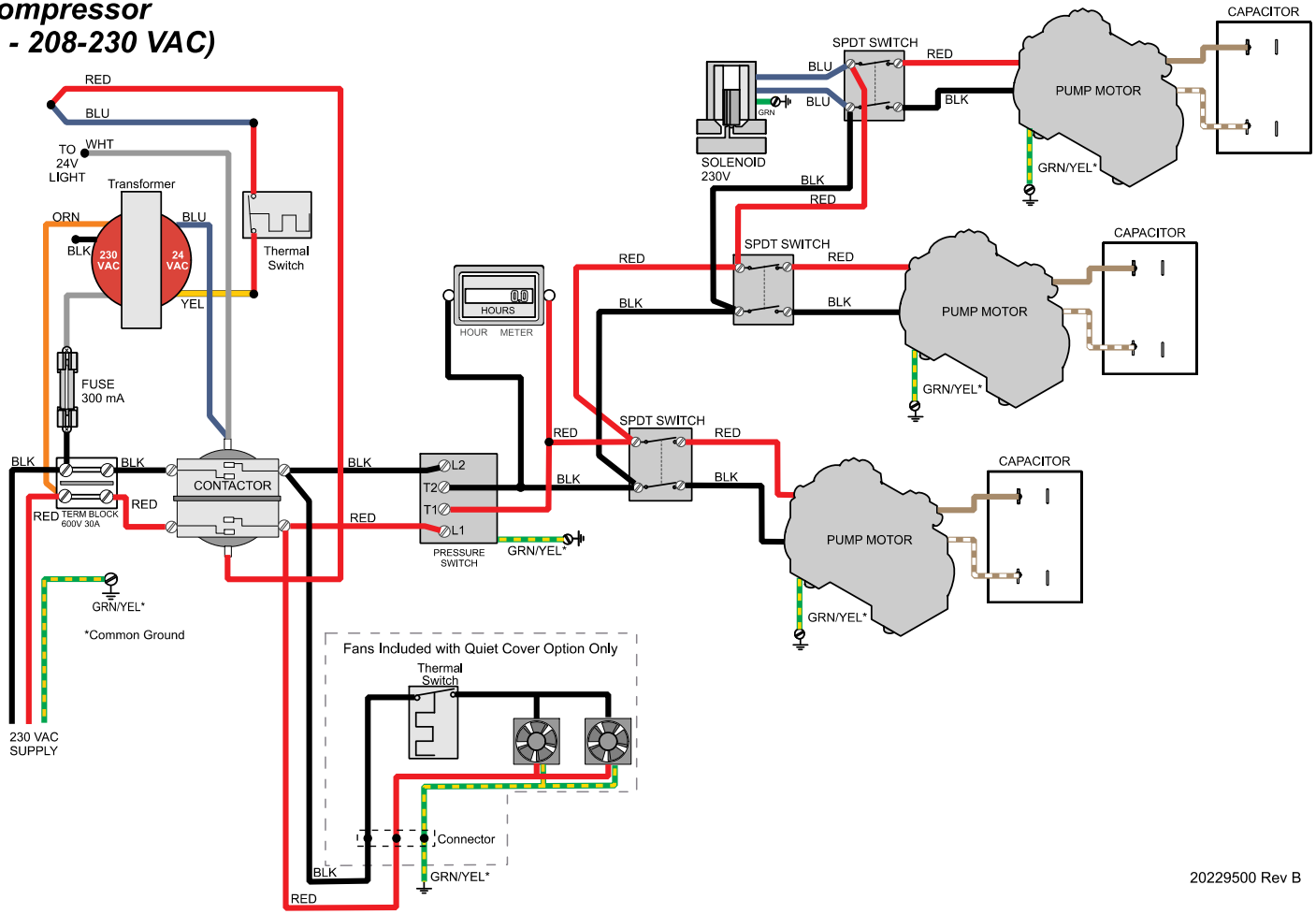
Wiring Diagrams

PowerAir™
Oil-Less Compressor
P32 (Triple - 208-230 VAC)



20229500 Rev B

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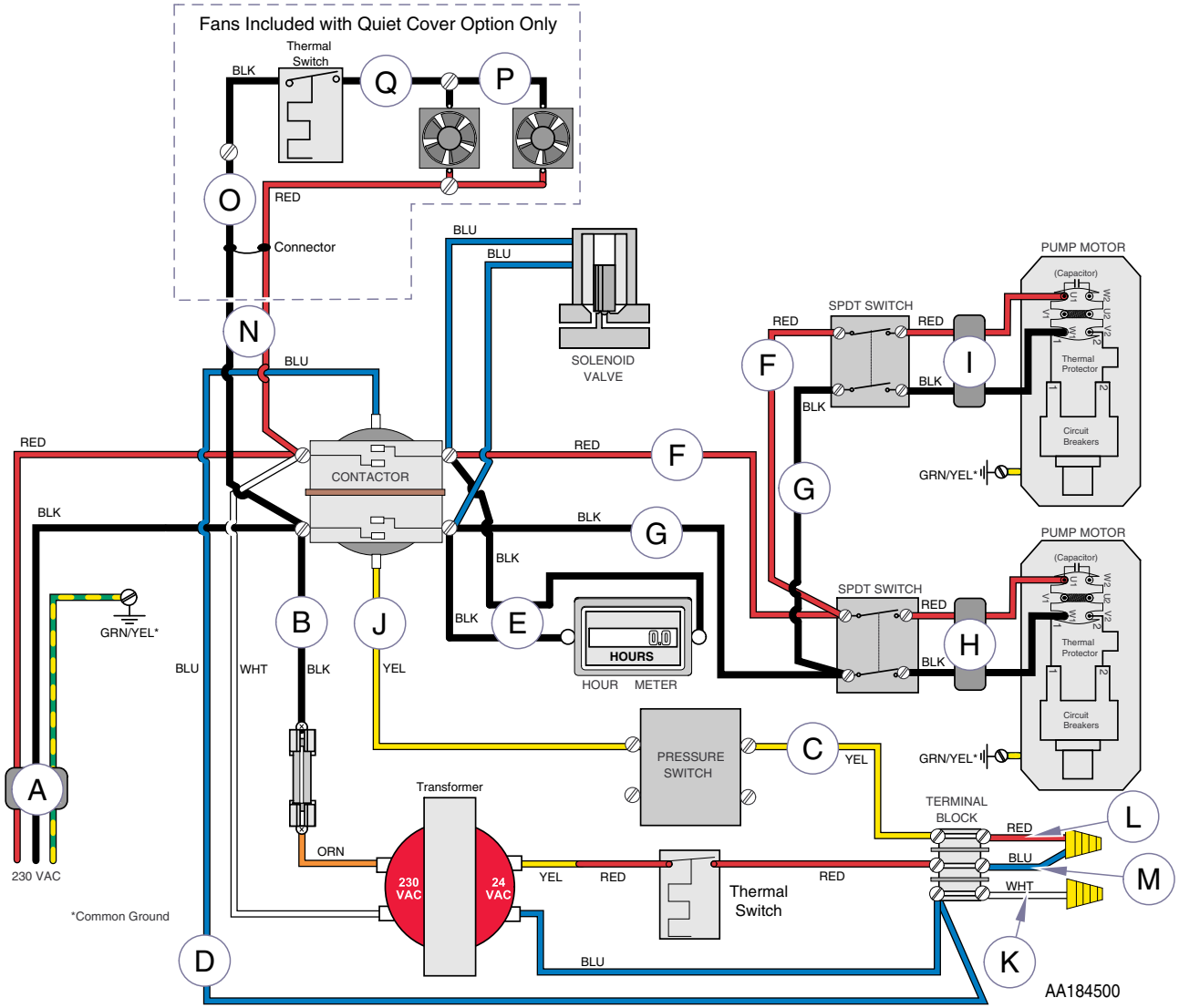
Wiring Diagrams

PowerAir® Oil Less Compressor
Dual Cattani Head - 208-230 Volts



Wire Harness	From:	To:	Part Number
A	Power Source	Contactor	**62978900**
B	Contactor	Fuse	**62979000**
C	Pressure Switch	Terminal Block	**62979100**
D	Contactor	Terminal Block	**62979200**
E	Hour Meter Cable	Contactor	**62979300**
F	SPDT Switch	SPDT Switch	**62982500**
G	SPDT Switch	SPDT Switch	**62982400**
H	Motor (Single)	SPDT Switch	**62982600**
I	SPDT Switch	Motor (Dual)	**62982700**
J	Contactor	Pressure Switch	**62983700**
K	Terminal Block	Low Voltage	**62983400**
L	Terminal Block	Low Voltage	**62983500**
M	Terminal Block	Low Voltage	**62983600**
N	Compressor Plug	Contactor	**62984000**
O	Quiet Cover Plug	Terminal Block & Thermal Switch	**62984500**
P	Fan Power Cord	Terminal Block	**62984600**
Q	Thermal Switch	Terminal Block	**62983900**

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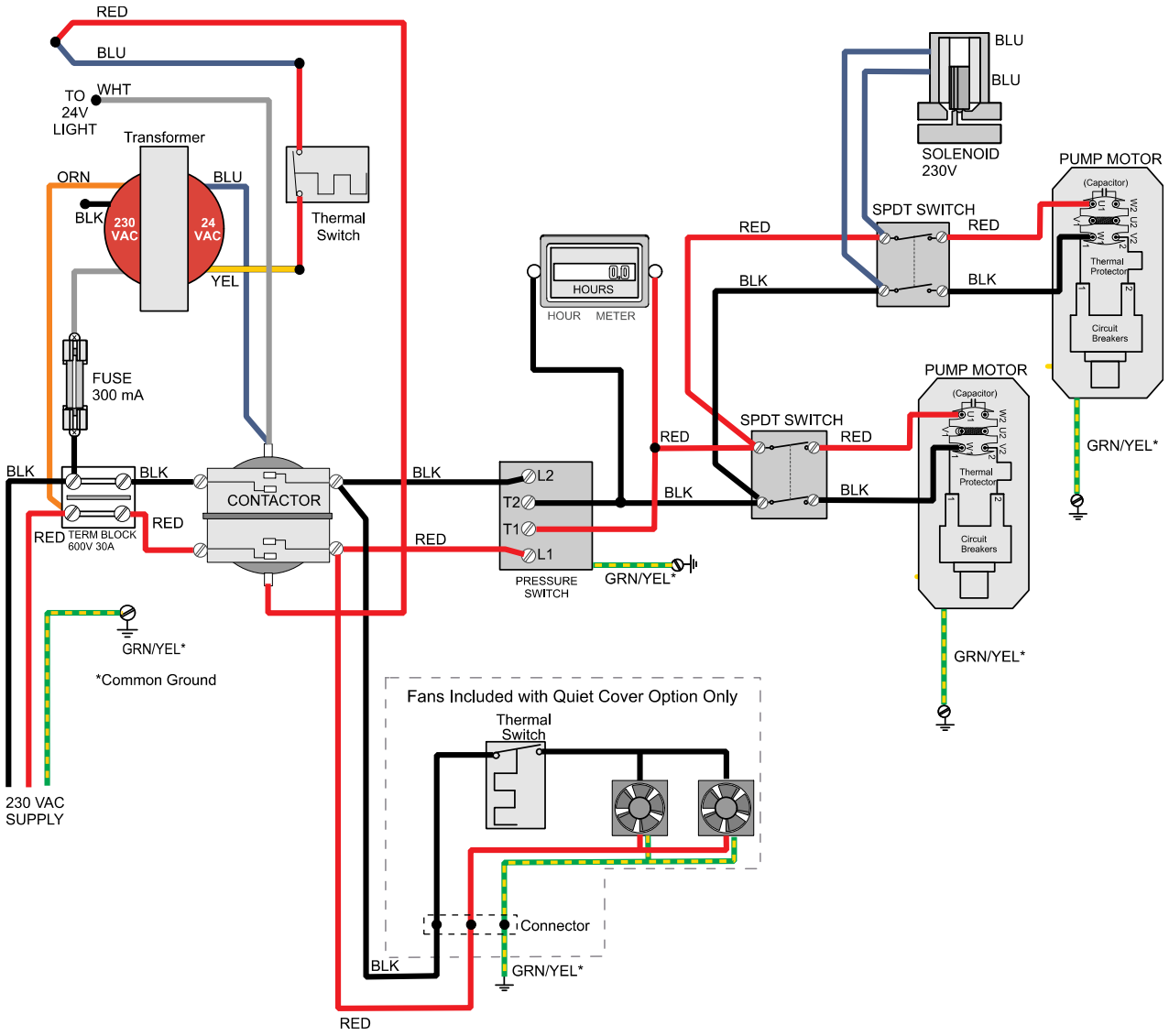
Wiring Diagrams

PowerAir® Oil Less Compressor
Dual Cattani Head - 208-230 Volts



AA184501

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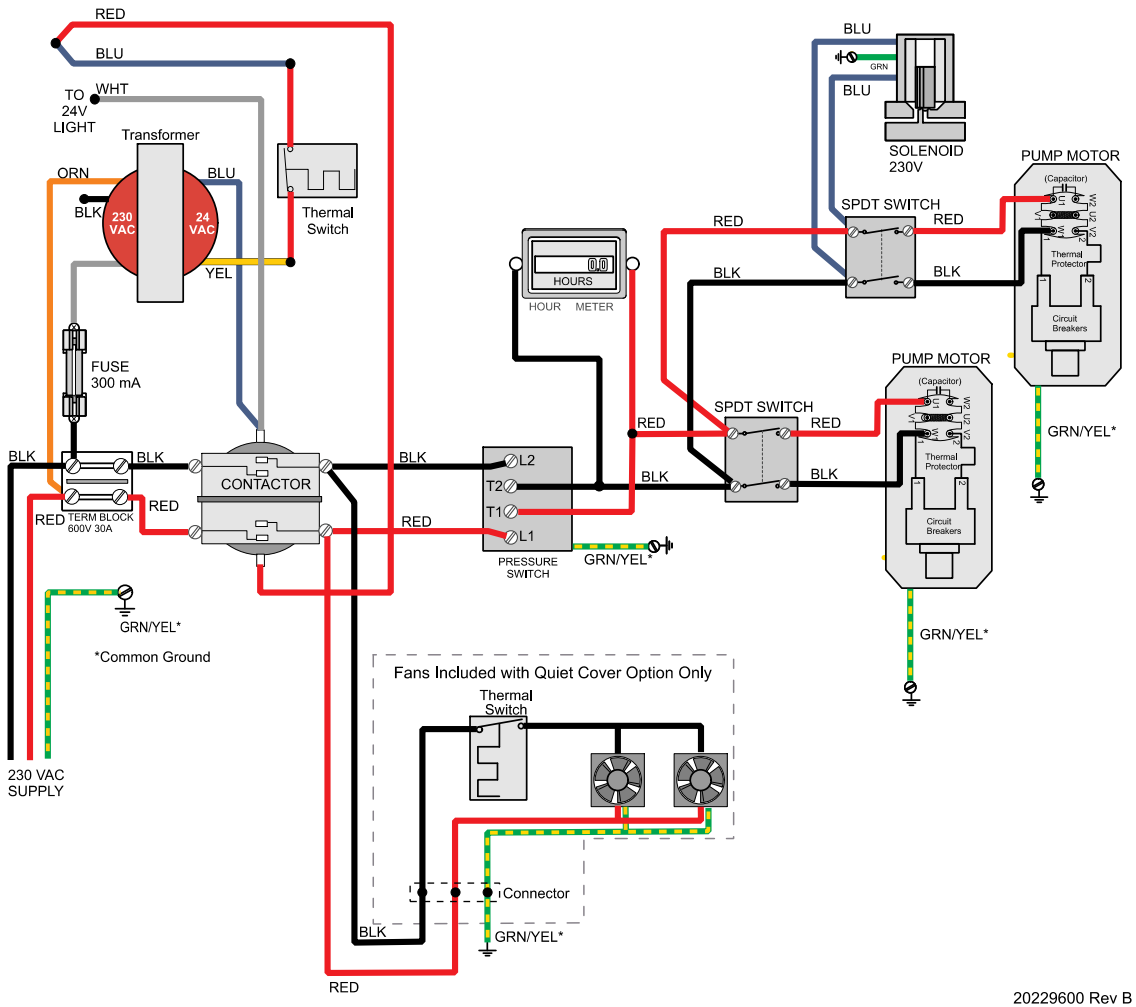
Wiring Diagrams

PowerAir ™
Oil-Less Compressor
P52 (Twin - 208-230 VAC)



20229600 Rev B

Models:	P52	P52
Serial Numbers:	V795562 thru Present	0908P520573 thru Present

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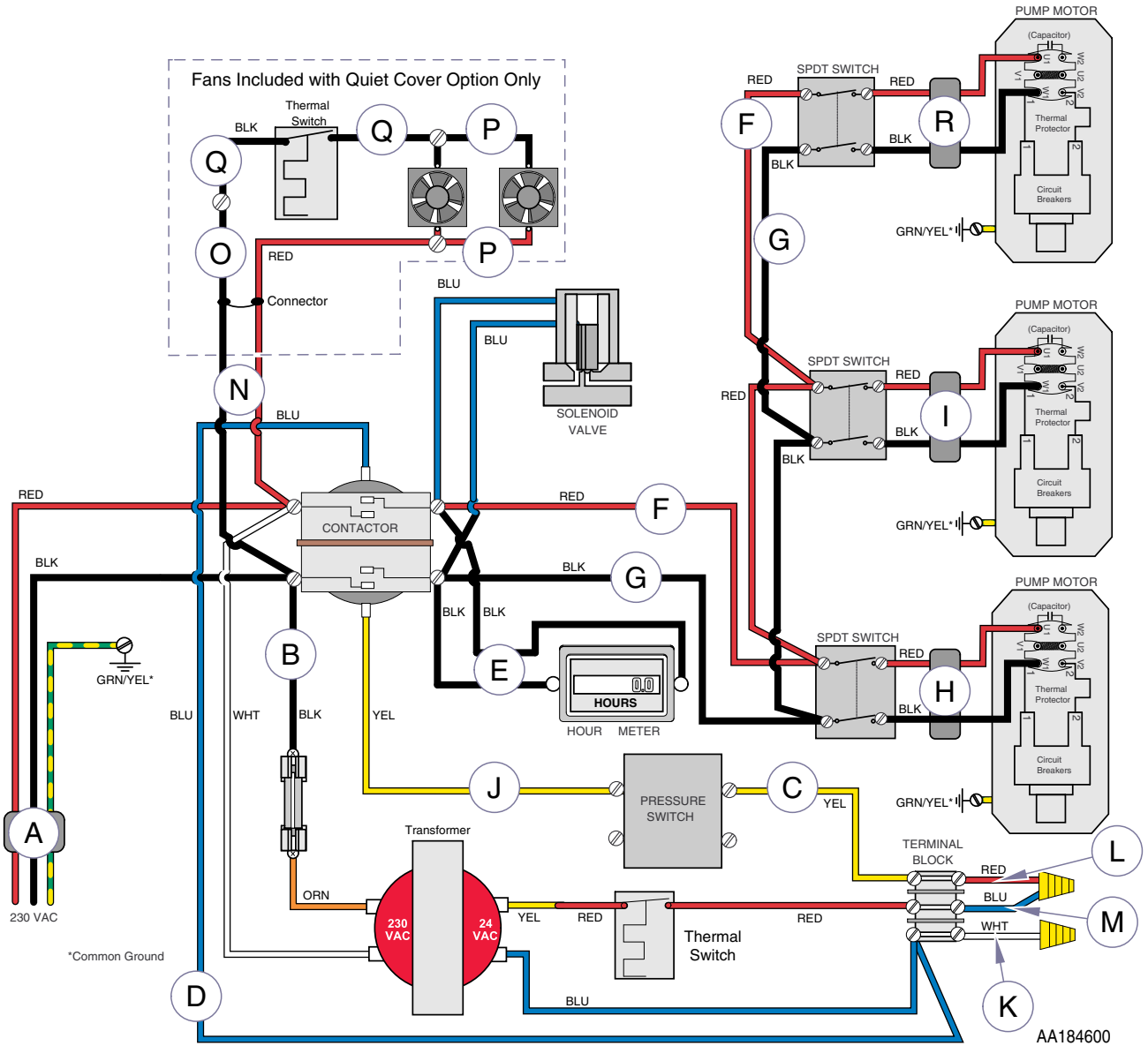
Wiring Diagrams

PowerAir® Oil Less Compressor
Triple Cattani Head - 208-230 Volts

Wire Harness	From:	To:	Part Number
A	Power Source	Contactor	62978900
B	Contactor	Fuse	62979000
C	Pressure Switch	Terminal Block	62979100
D	Contactor	Terminal Block	62979200
E	Hour Meter Cable	Contactor	62979300
F	SPDT Switch	SPDT Switch	62982500
G	SPDT Switch	SPDT Switch	62982400
H	Motor (Single)	SPDT Switch	62982600
I	SPDT Switch	Motor (Dual)	62982700
J	Contactor	Pressure Switch	62983700
K	Terminal Block	Low Voltage	62983400
L	Terminal Block	Low Voltage	62983500
M	Terminal Block	Low Voltage	62983600
N	Compressor Plug	Contactor	62984000
O	Quiet Cover Plug	Terminal Block & Thermal Switch	62984500
P	Fan Power Cord	Terminal Block	62984600
Q	Thermal Switch	Terminal Block	62983900
R	Motor (Triple)	SPDT Switch	62982800



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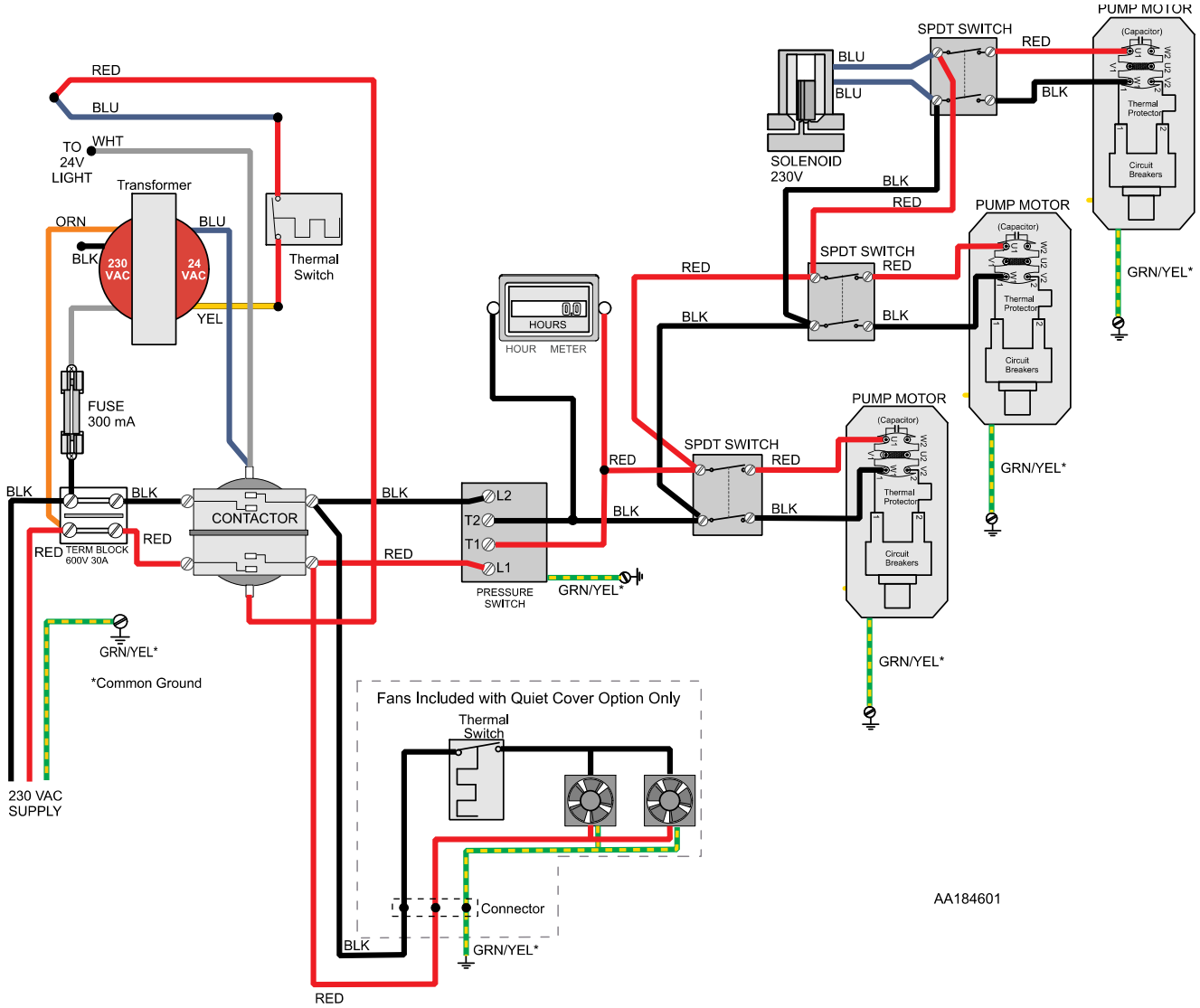
PowerAir® Oil Less Compressor
Triple Cattani Head - 208-230 Volts



Models:	P72	P72
Serial Numbers:	0903P720191 thru 0909P720227	V785000 thru V795511

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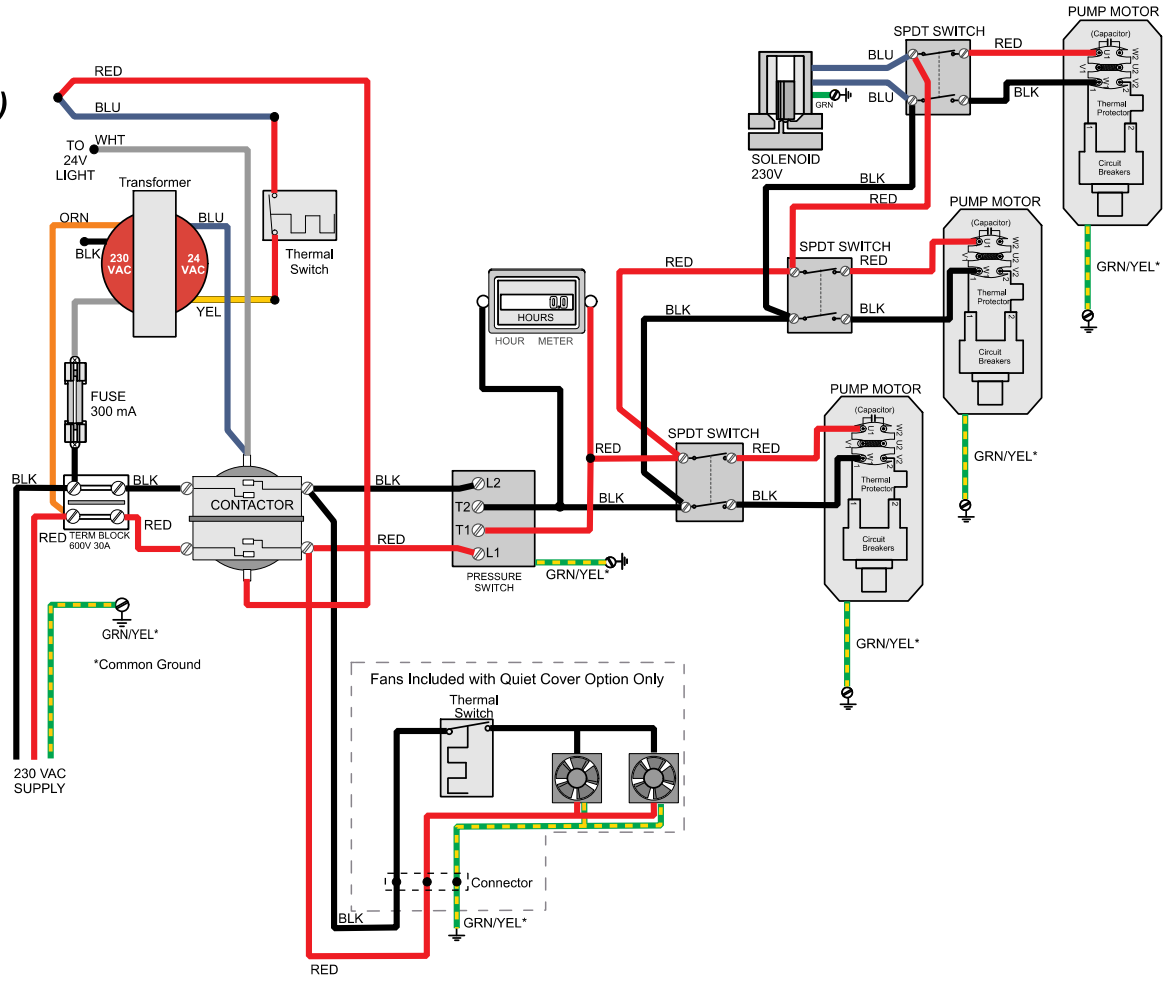
Wiring Diagrams

PowerAir ™
Oil-Less Compressor
P72 (Triple - 208-230 VAC)



20229700 Rev B

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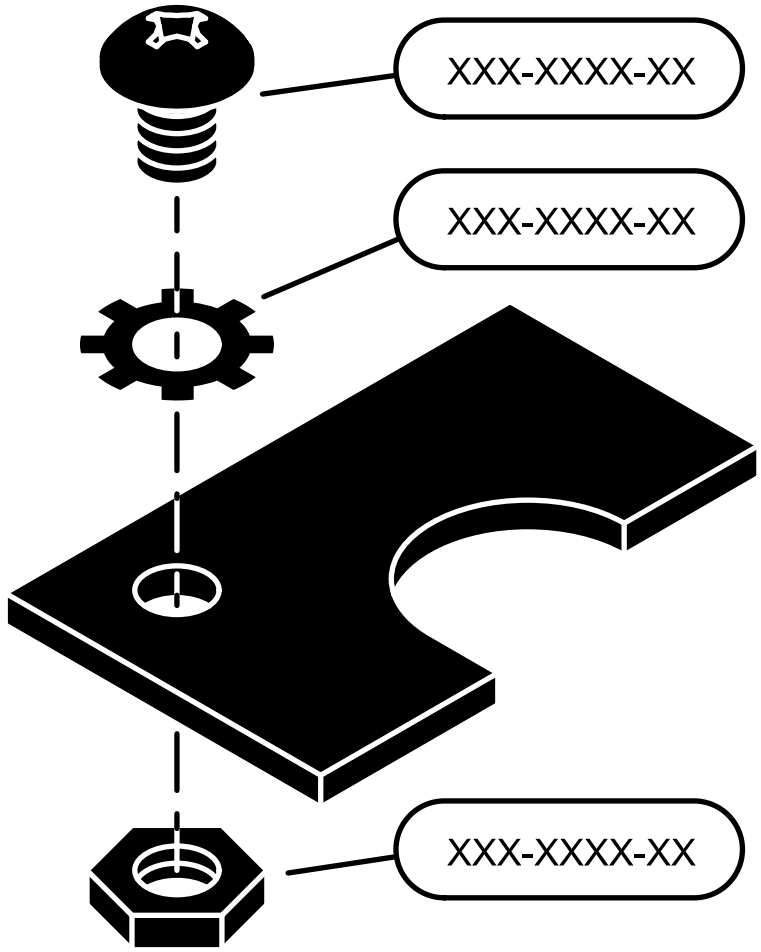
Section E

Exploded Views & Parts Lists

Model: | **Go To Page:**
ClassicSeries® E-2
PowerAir® E-3

Click GO TO PAGE: button (then enter desired page number) to view any page in this document.



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ClassicSeries®
CL21
CL22
CL32
CL52

Installation Kit
CL21, C22 ..... E-4*
CL32, CL52 ..... E-5*

Label Locations E-26*

Pneumatic Tubes and Hoses
CL21, CL22 ..... **E-16**
CL32 ..... **E-17**
CL52 ..... **E-18**

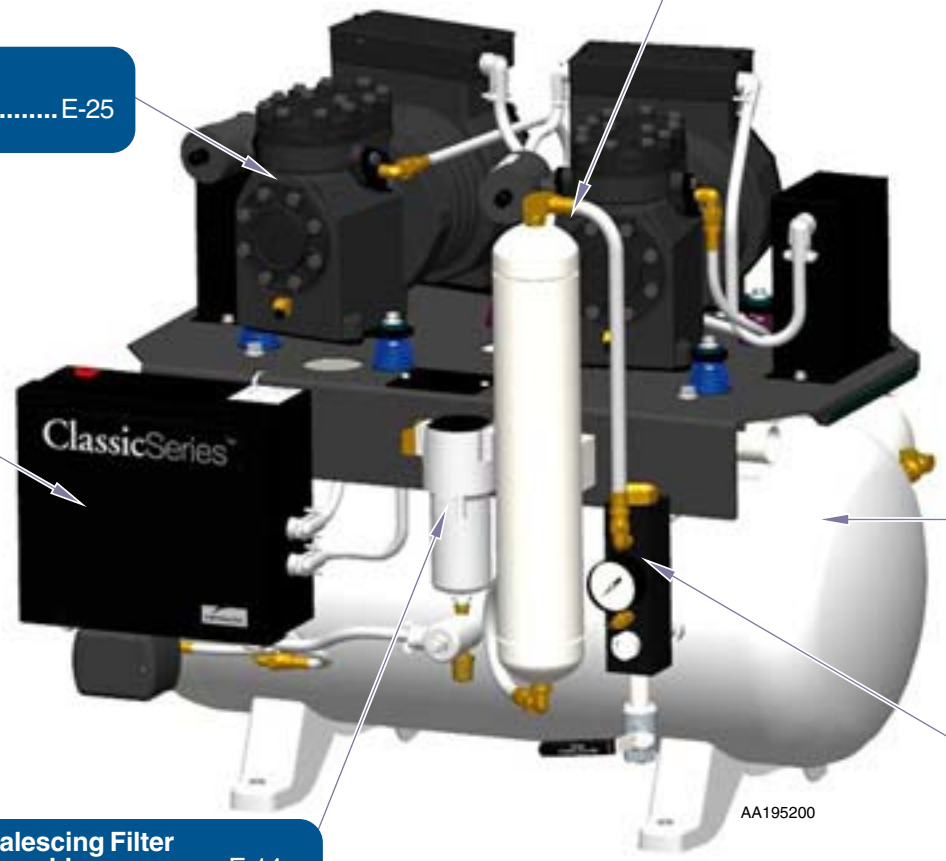
Compressor Heads E-25

Electrical Control Box E-15*

Tanks & Main Components E-12

Check Valve Manifold Assembly. . E-13

Coalescing Filter Assembly E-14



** Indicates multiple pages due to a model / serial number break for the parts illustration*

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PowerAir®
P21
P22
P32
P52
P72

Installation Kit
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P52 ..... E-9*
P72 ..... E-10*

Label Locations E-26*

Sound Covers (Accessory)...E-27

Compressor Heads
P21, P22, P32 ..... **E-23**
P52, P72 ..... **E-24**

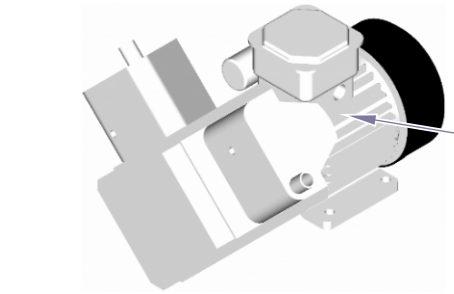
Electrical Control Box E-15*

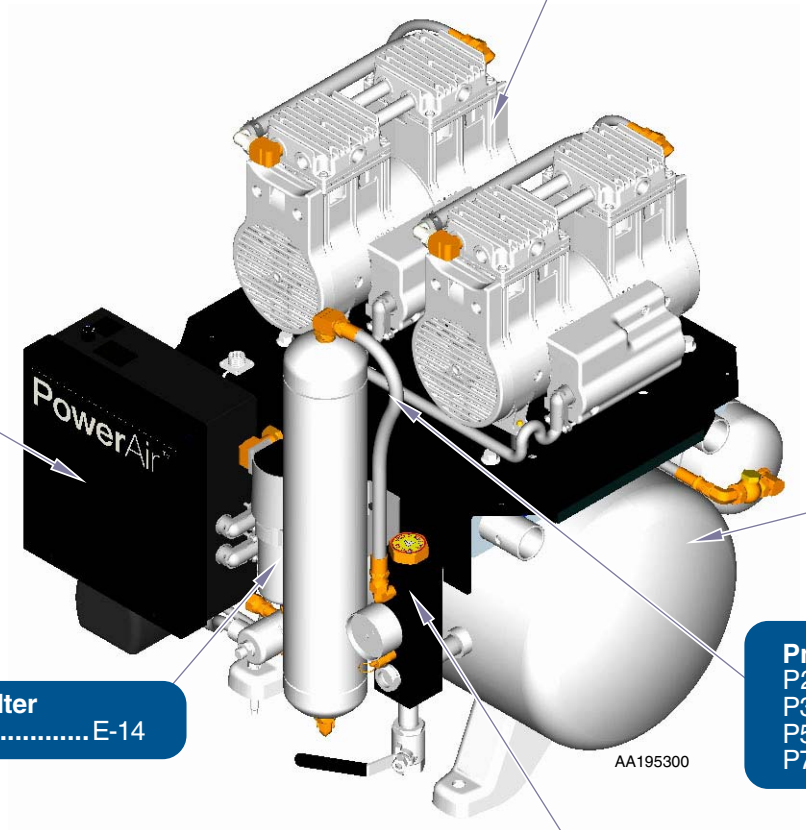
Tanks & Main Components E-12

Coalescing Filter Assembly E-14

Pneumatic Tubes and Hoses
P21, P22 ..... E-19
P32 ..... E-20
P52 ..... E-21
P72 ..... E-22

Check Valve Manifold Assembly. . E-13





** Indicates multiple pages due to a model / serial number break for the parts illustration*

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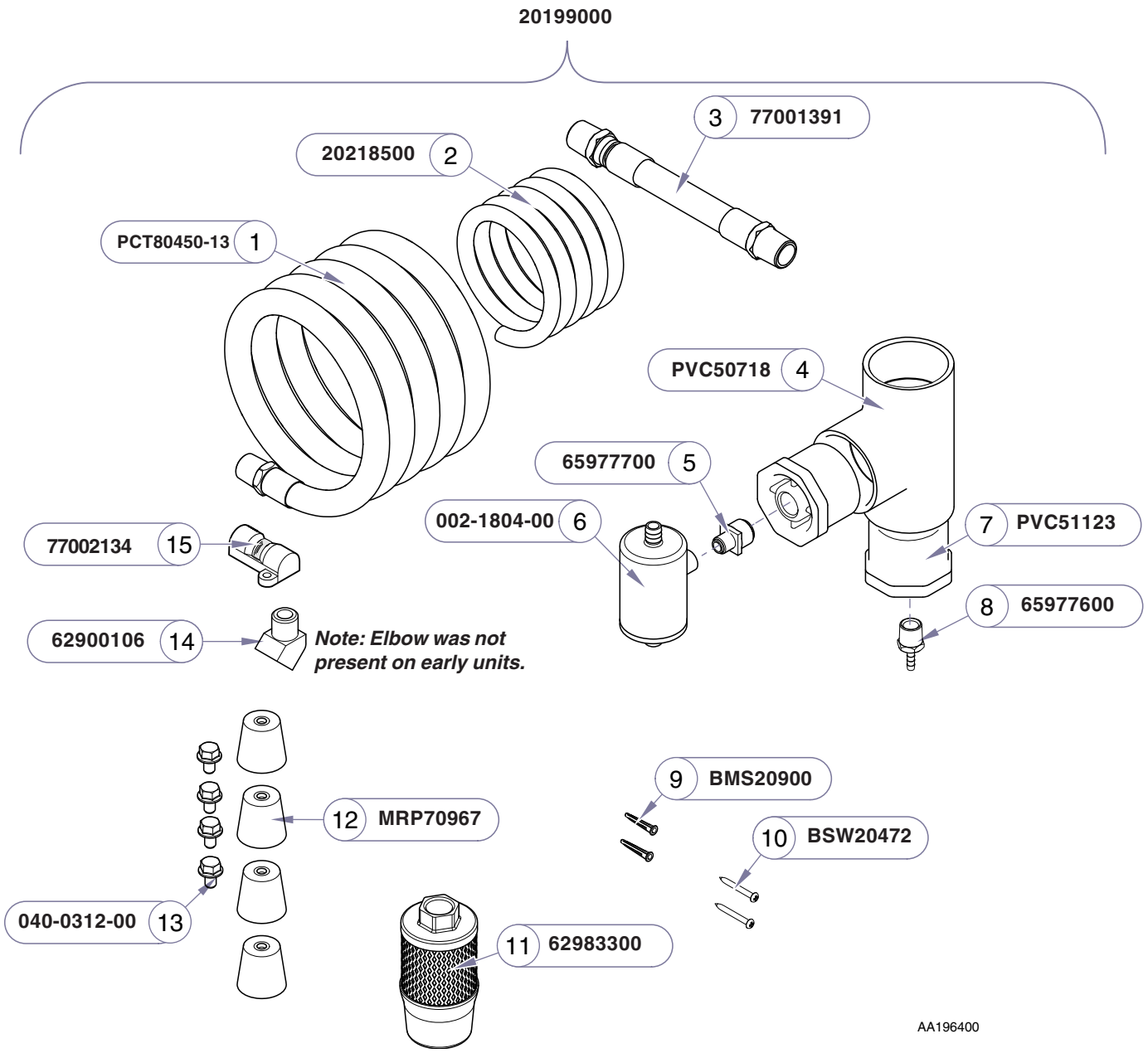

Note: Refer to Date listed below. Must use Kit # 20221000 for any Units built August of 2008 to Present.

Items # 4, 5, 7, 8, 9, and 10 are only available though Midmark for compressors under warranty. If compressor is out of warranty these items are available at your local hardware store, if needed for service.

Item	Description	Qty.
	20199000 Kit *(includes items 1 - 18)*	
1	• Fresh Air Intake Hose *(1/2") (no fittings)*	1
2	• Drain Hose *(16' [sold by the inch])*	AR
3	• Operatory High Pressure Hose Assy	1
4	• SL PVC Tee *(2")*	1
5	• Nipple *(1/2" MNPT x 1/4" NPT)*	1
6	• Filter Assembly Kit	1
7	• PVC Bushing *(2" x 1/2")*	2
8	• Brass Hose, Barb *(1/2' MPT x 1/4")*	1
9	• Wall Anchor *(3/16" x 1-1/4")*	2
10	• Screw *(#8 x 1 1/2")*	2
11	• Exhaust Silencer	1
12	• Rubber Foot	4
13	• Bolt *(5/16-18" x 1/2"")*	4
14	• Elbow (45 Deg Street *(1/2" NPT)*	1
15	•I ndicator	1
	Not Shown - 62988004	
16	• Pipe Hanger *(2")*	1
17	• Oil	1

Always Specify Model & Serial Number

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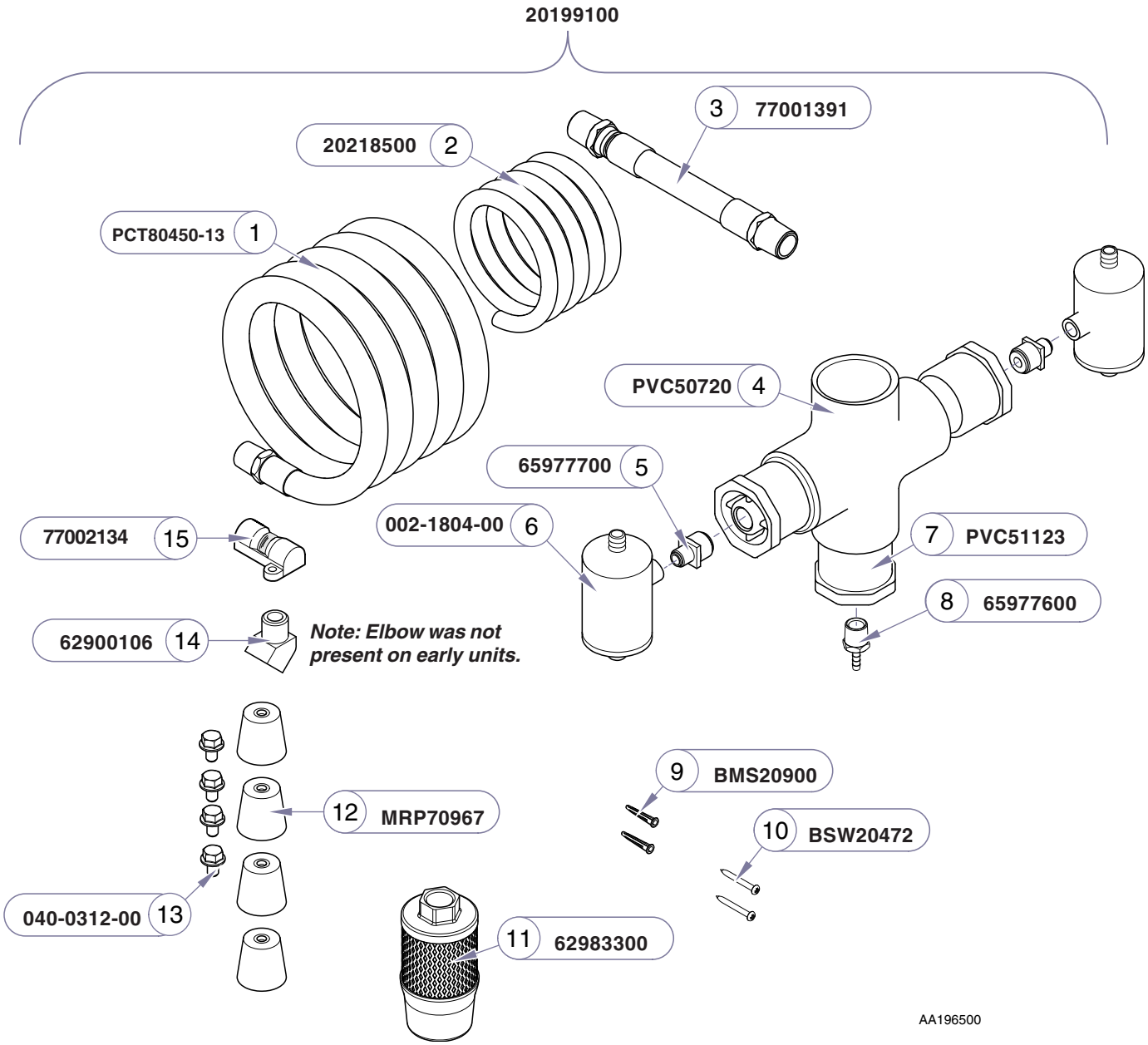

Note: Refer to Date listed below. Must use Kit # 20221000 for any Units buit after the listed.

Items # 4, 5, 7, 8, 9, and 10 are only available though Midmark for compressors under warranty. If compressor is out of warranty these items are available at your local hardware store, if needed for service.

Item	Description	Qty.
	20199100 Kit *(includes items 1 - 18)*	
1	• Fresh Air Intake Hose *(1/2") (no fittings)*	1
2	• Drain Hose *(16' [sold by the inch])*	AR
3	• Operatory High Pressure Hose Assy	1
4	• SL PVC Cross *(2")*	1
5	• Nipple *(1/2" MNPT x 1/4" NPT)*	2
6	• Filter Assembly Kit	2
7	• PVC Bushing *(2" x 1/2")*	3
8	• Brass Hose, Barb *(1/2' MPT x 1/4")*	1
9	• Wall Anchor *(3/16" x 1-1/4")*	2
10	• Screw *(#8 x 1 1/2")*	2
11	• Exhaust Silencer	1
12	• Rubber Foot	4
13	• Bolt *(5/16-18" x 1/2"")*	4
14	• Elbow (45 Deg Street *(1/2" NPT)*	1
15	•I ndicator with O-Rings	1
	Not Shown - 62988004	
16	• Pipe Hanger *(2")*	1
17	• Oil	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***CL52*** *Up to July 2008*	***CL32*** *Up to July 2008*

Installation Kit

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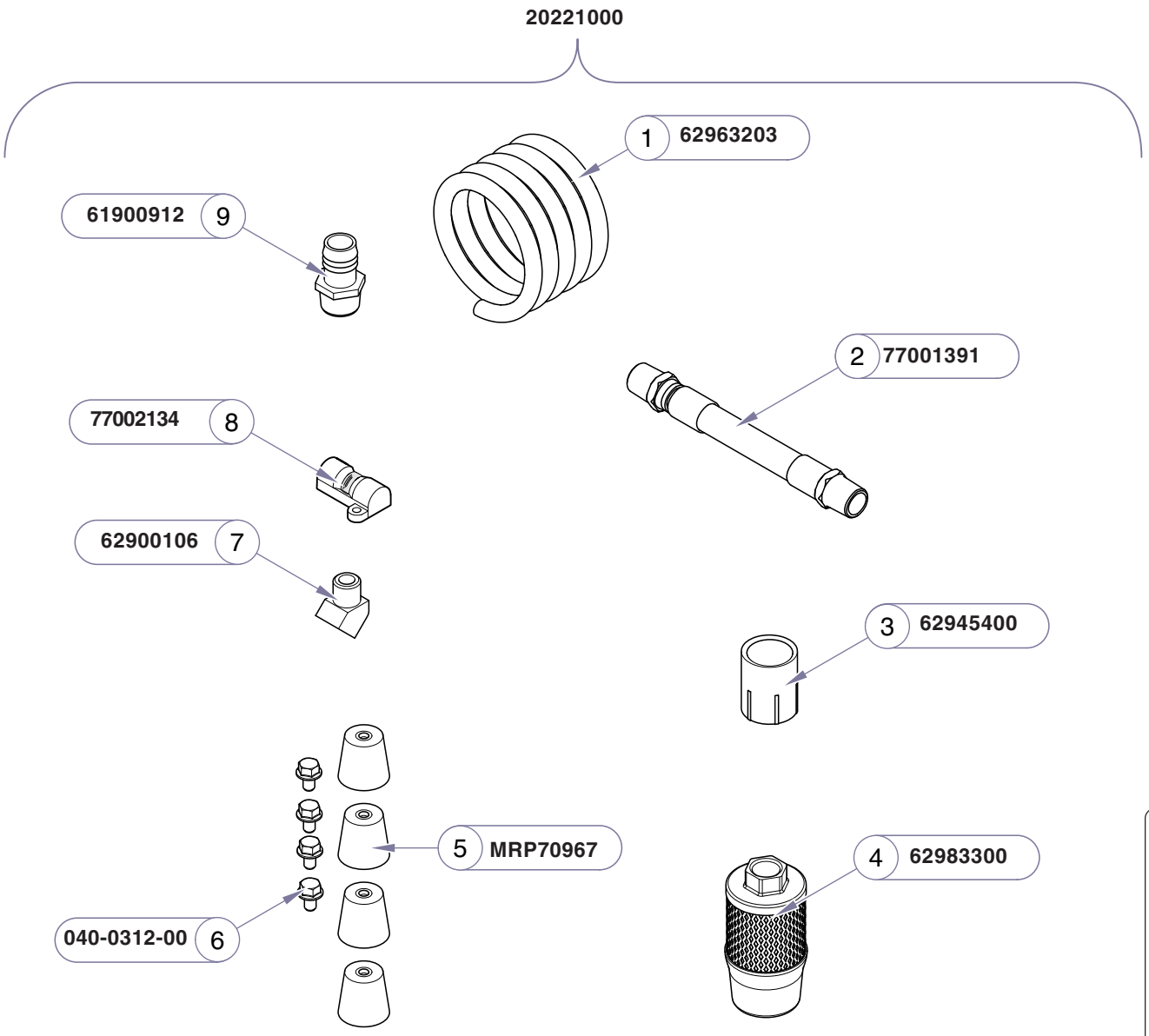

Item	Description	Qty.
	20221000 Kit *(includes items 1 - 10)*	
1	• Hose x *(1")* MPT, Conn *(3/4")*	1
2	• Operatory High Pressure Hose Assy	1
3	• Adapter, Female *(1" ID x 1" NPT)*	1
4	• Exhaust Silencer	1
5	• Rubber Foot	4
6	• Bolt *(5/16-18" x 1/2"")*	4
7	• Elbow 45 Deg Street *(1/2" NPT)*	1
8	• Indicator with O-Rings	1
9	• Conn, *(3/4" Hose x 1" MPT)*	1
	Not Shown - 77000955	
10	• Oil	1

Always Specify Model & Serial Number

Installation Kit

Models: Serial Numbers:	***CL21*** *Built August 2008 thru Present*	***CL22*** *Built August 2008 thru Present*	***CL52*** *Built August 2008 thru Present*	***CL32*** *Built August 2008 thru Present*

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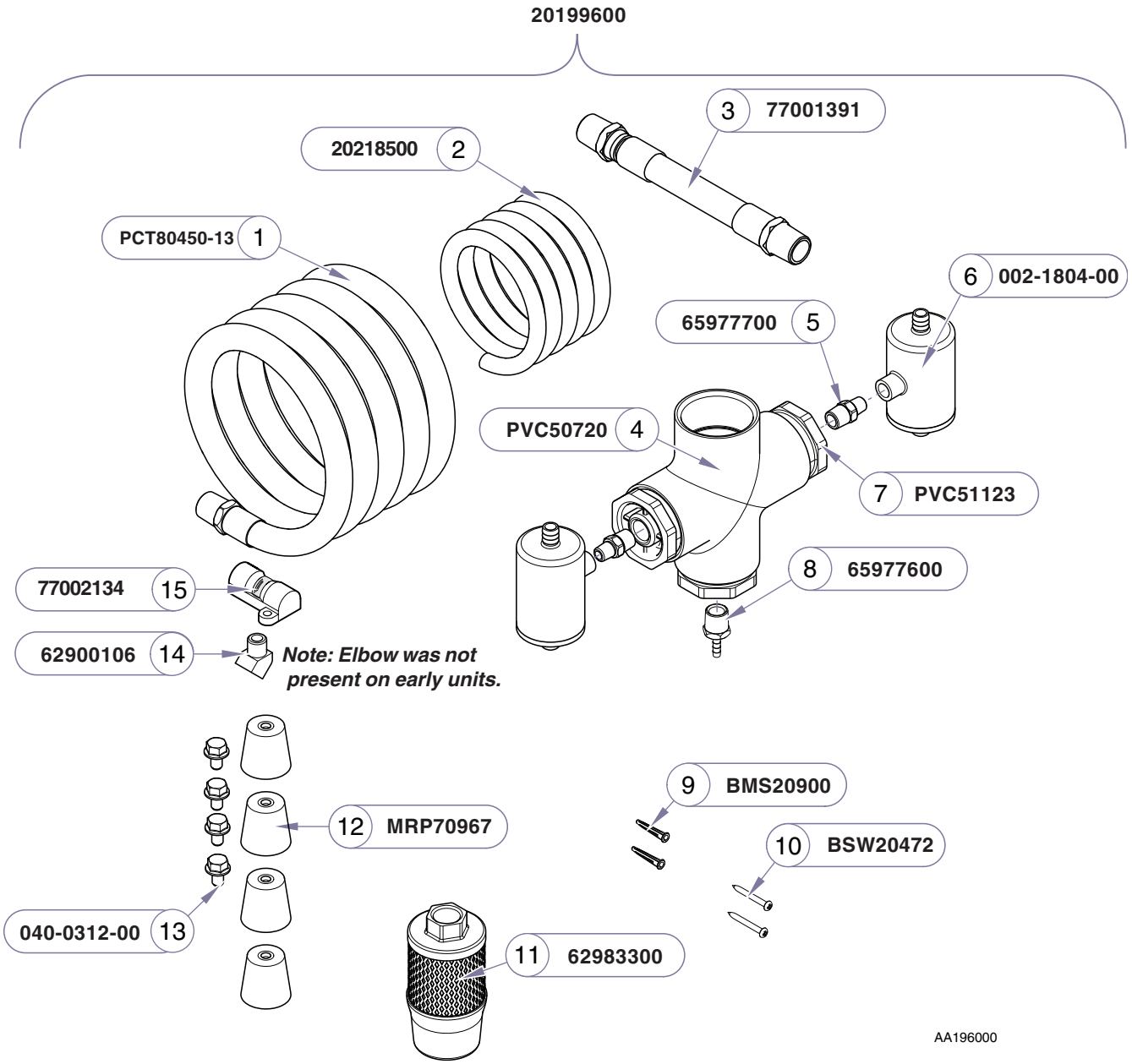

Note: Refer to Date listed below. Must use Kit # 20220900 for any Units built August of 2008 to Present.

Items # 4, 5, 7, 8, 9, and 10 are only available though Midmark for compressors under warranty. If compressor is out of warranty these items are available at your local hardware store, if needed for service.

Item	Description	Qty.
	20199600 Kit *(includes items 1 - 17)*	
1	• Fresh Air Intake Hose *(1/2") (no fittings)*	1
2	• Drain Hose *(16' [sold by the inch])*	AR
3	• Operatory High Pressure Hose Assy	1
4	• SL PVC Cross *(2")*	1
5	• Nipple *(1/2" MNPT x 1/4" NPT)*	2
6	• Filter Assembly Kit	2
7	• PVC Bushing *(2" x 1/2")*	3
8	• Brass Hose, Barb *(1/2' MPT x 1/4")*	1
9	• Wall Anchor *(3/16" x 1-1/4")*	2
10	• Screw *(#8 x 1 1/2")*	2
11	• Exhaust Silencer	1
12	• Rubber Foot	4
13	• Bolt *(5/16-18" x 1/2"")*	4
14	• Elbow (45 Deg Street *(1/2" NPT)*	1
15	• Indicator with O-Rings	1
	Not Shown - 62988004	
16	• Pipe Hanger *(2")*	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***P21*** *Up to July 2008*	***P22*** *Up to July 2008*	***P32*** *Up to July 2008*

Installation Kit

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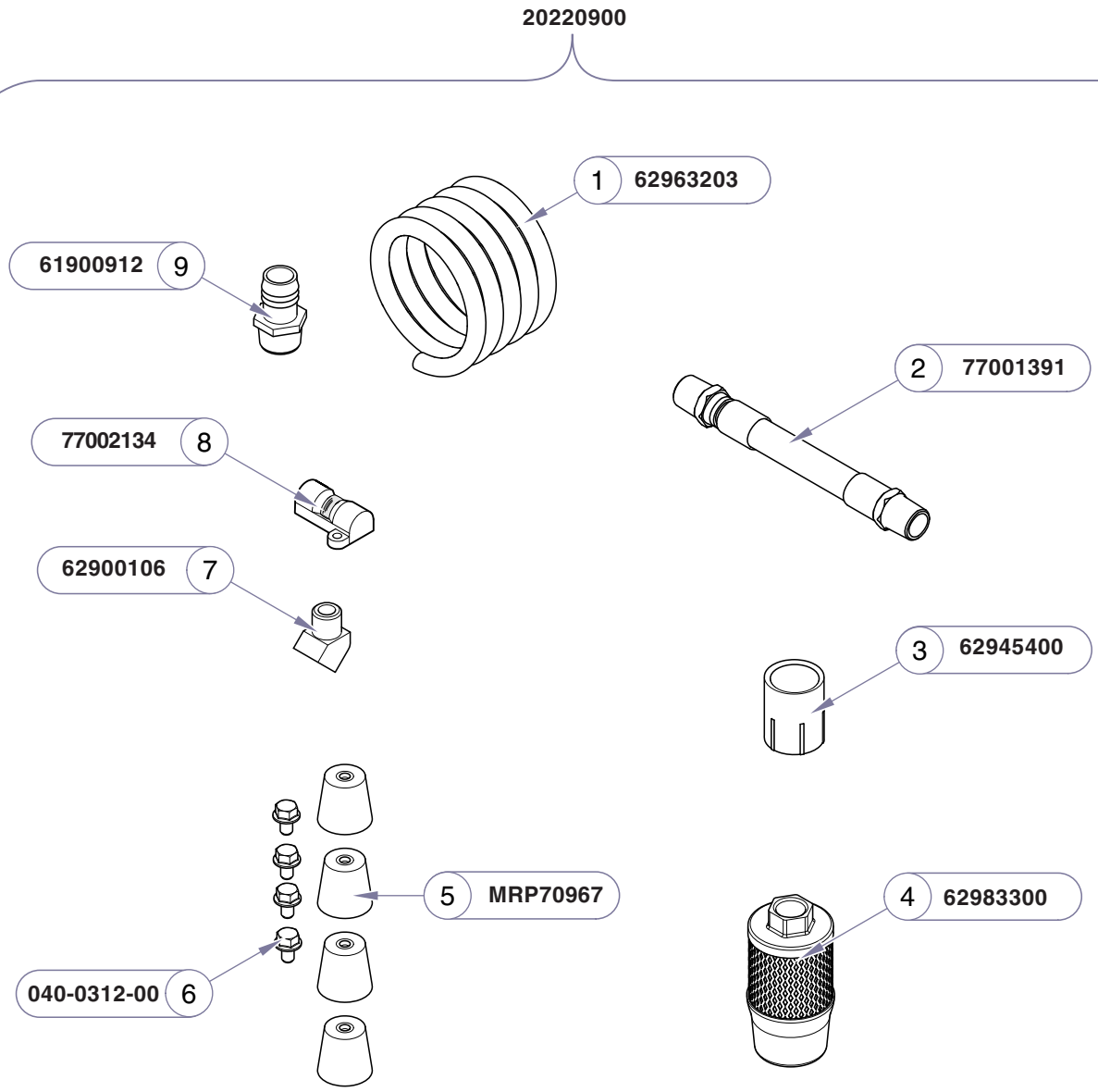

Item	Description	Qty.
	220220900 Kit *(includes items 1 - 9)*	
1	• Hose x *(1")* MPT, Conn *(3/4")*	1
2	• Operatory High Pressure Hose Assy	1
3	• Adapter, Female *(1" ID x 1" NPT)*	1
4	• Exhaust Silencer	1
5	• Rubber Foot	4
6	• Bolt *(5/16-18" x 1/2"")*	4
7	• Elbow (45 Deg Street *(1/2" NPT)*	1
8	• Indicator with O-Rings	1
9	• Conn, *(3/4" Hose x 1" MPT)*	1

Always Specify Model & Serial Number

Installation Kit

Models: *Serial Numbers:*	***P21*** *Built August 2008 thru Present*	***P22*** *Built August 2008 thru Present*	***P32*** *Built August 2008 thru Present*

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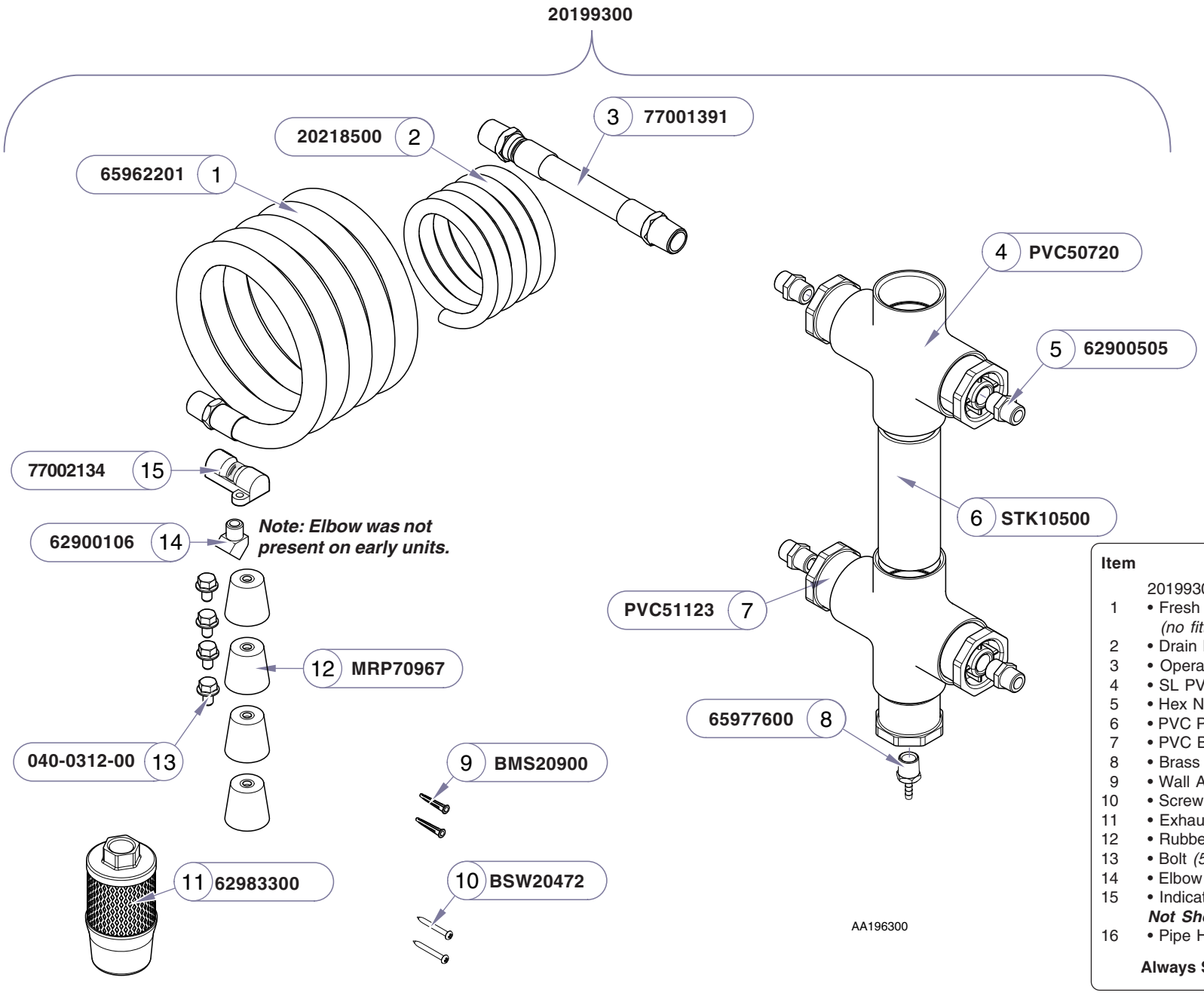

Note: Refer to Date listed below. Must use Kit # 20220800 for any Units built August of 2008 to Present.

Items # 4, 5, 7, 8, 9, and 10 are only available though Midmark for compressors under warranty. If compressor is out of warranty these items are available at your local hardware store, if needed for service.

Item	Description	Qty.
	20199300 Kit *(includes items 1 - 16)*	
1	• Fresh Air Intake Hose (1/4" *ID x 3/8" OD) (no fittings)*	*1*
2	• Drain Hose *(16' [sold by the inch])*	AR
3	• Operatory High Pressure Hose Assy	1
4	• SL PVC Cross *(2")*	2
5	• Hex Nipple *(1/2" NPT x 1/2" NPT)*	4
6	• PVC Pipe *(2", SCH 40, 6" L)*	1
7	• PVC Bushing *(2" x 1/2" X FPT)*	5
8	• Brass Hose, Barb *(1/2' MPT x 1/4")*	1
9	• Wall Anchor *(3/16" x 1-1/4")*	2
10	• Screw *(#8 x 1 1/2")*	2
11	• Exhaust Silencer	1
12	• Rubber Foot	4
13	• Bolt *(5/16-18" x 1/2"")*	4
14	• Elbow (45 Deg Street *(1/2" NPT)*	1
15	• Indicator with O-Rings	1
	Not Shown - 62988004	
16	• Pipe Hanger *(2")*	1

Always Specify Model & Serial Number

Models: ***P52***
Serial Numbers: *Up to July 2008*

Installation Kit

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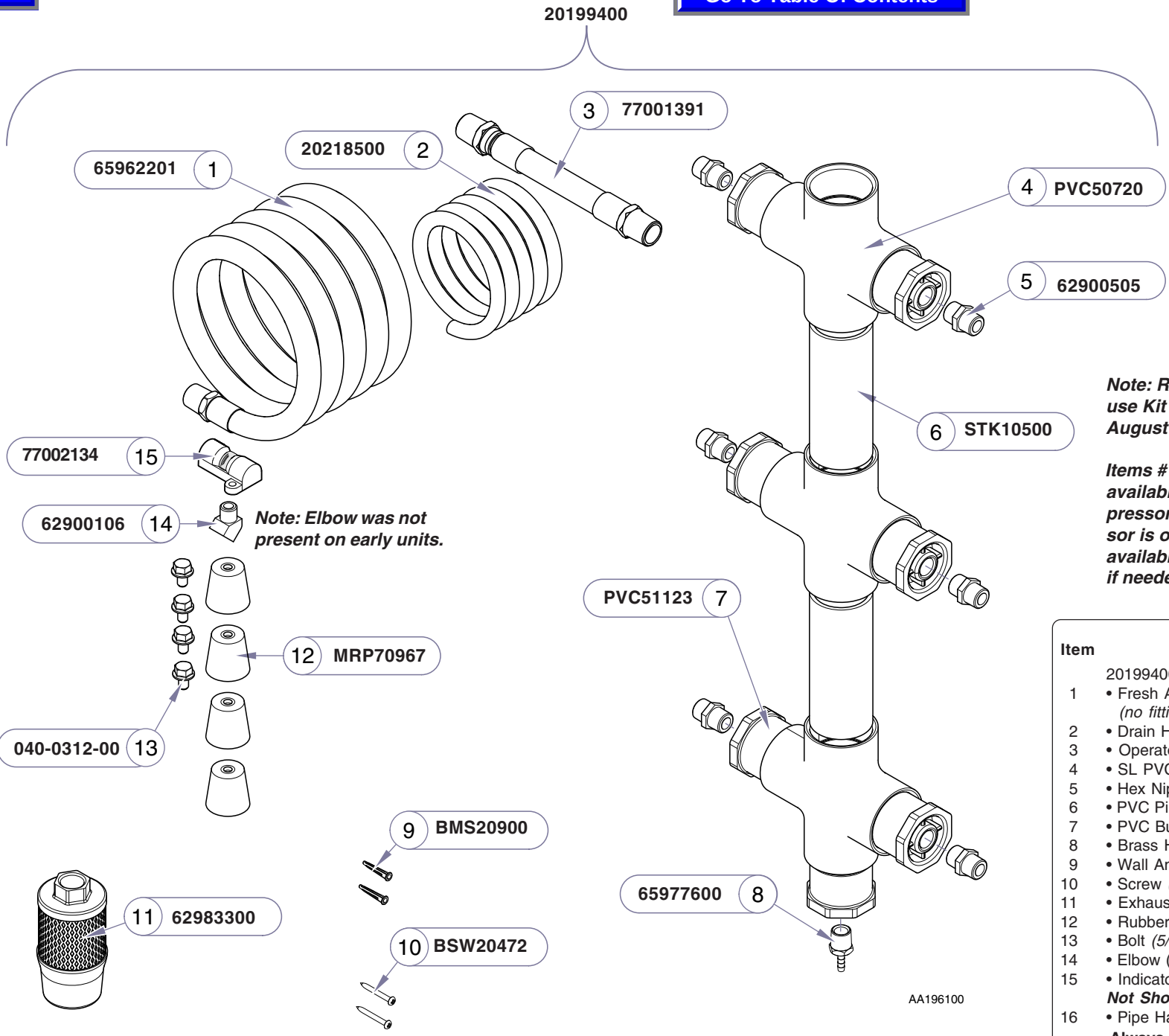

Note: Refer to Date listed below. Must use Kit # 20220800 for any Units built August of 2008 to Present.

Items # 4, 5, 7, 8, 9, and 10 are only available though Midmark for compressors under warranty. If compressor is out of warranty these items are available at your local hardware store, if needed for service.

Item	Description	Qty.
	20199400 Kit *(includes items 1 - 16)*	
1	• Fresh Air Intake Hose (1/4" *ID x 3/8" OD) (no fittings)*	2
2	• Drain Hose *(16' [sold by the inch])*	AR
3	• Operatory High Pressure Hose Assy	1
4	• SL PVC Cross *(2")*	3
5	• Hex Nipple *(1/2" NPT x 1/2" NPT)*	6
6	• PVC Pipe *(2", SCH 40, 6" L)*	2
7	• PVC Bushing *(2" x 1/2" X FPT)*	7
8	• Brass Hose, Barb *(1/2' MPT x 1/4")*	1
9	• Wall Anchor *(3/16" x 1-1/4")*	2
10	• Screw *(#8 x 1 1/2")*	2
11	• Exhaust Silencer	1
12	• Rubber Foot	4
13	• Bolt *(5/16-18" x 1/2"")*	4
14	• Elbow (45 Deg Street *(1/2" NPT)*	1
15	• Indicator with O-Rings	1
	Not Shown - 62988004	
16	• Pipe Hanger *(2")*	1

Always Specify Model & Serial Number

Installation Kit

Models: ***P72***
Serial Numbers: *Up to July 2008*

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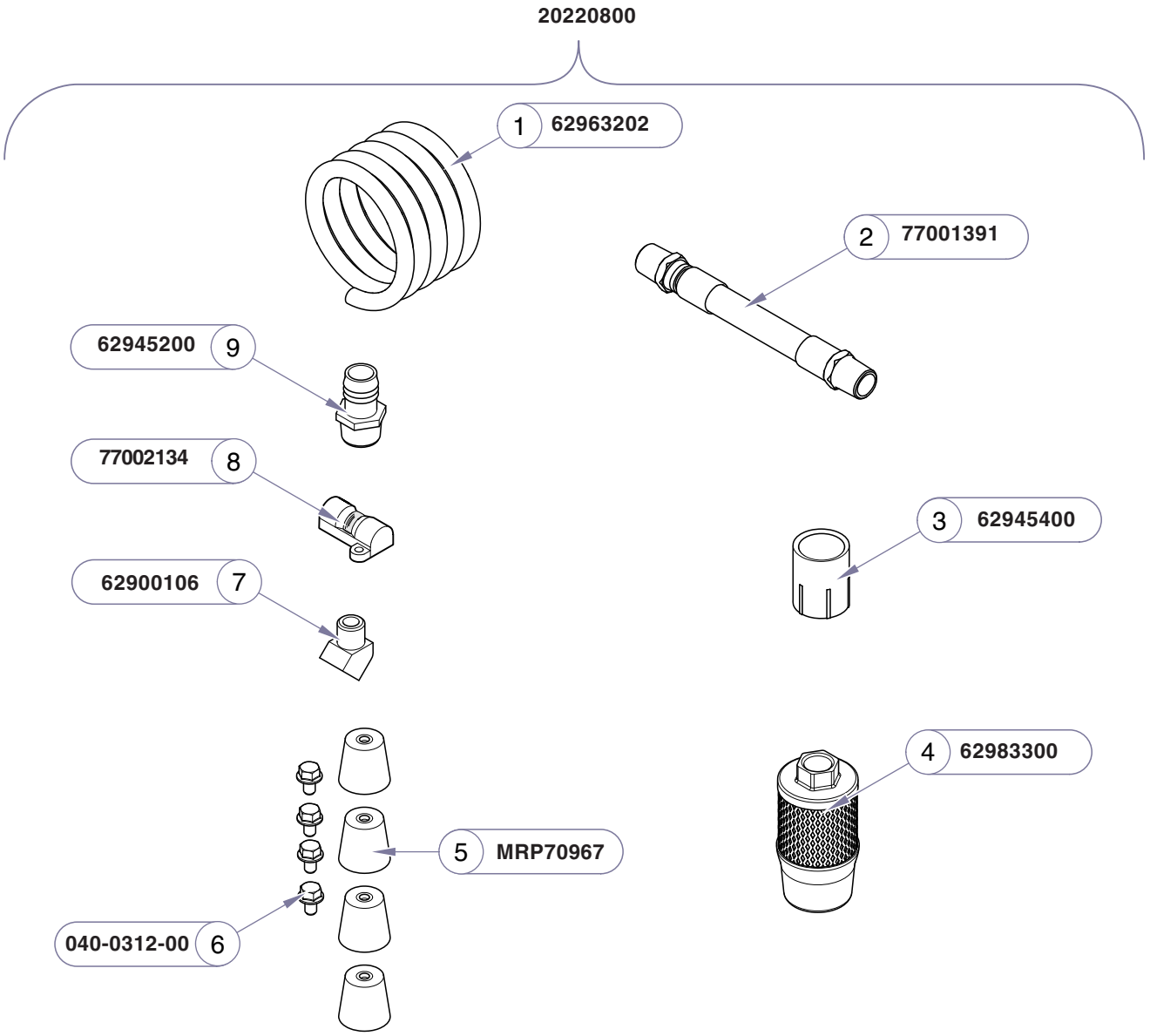

Item	Description	Qty.
	220220800 Kit *(includes items 1 - 9)*	
1	• Hose Flex, PVC *(10')*	1
2	• Operatory High Pressure Hose Assy	1
3	• Adapter, Female *(1" ID x 1" NPT)*	1
4	• Exhaust Silencer	1
5	• Rubber Foot	4
6	• Bolt *(5/16-18" x 1/2"")*	4
7	• Elbow (45 Deg Street *(1/2" NPT)*	1
8	• Indicator with O-Rings	1
9	• Adapter, Male (1"H x 1"NPT)	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***P52*** *Built August 2008 thru Present*	***P72*** *Built August 2008 thru Present*

Installation Kit

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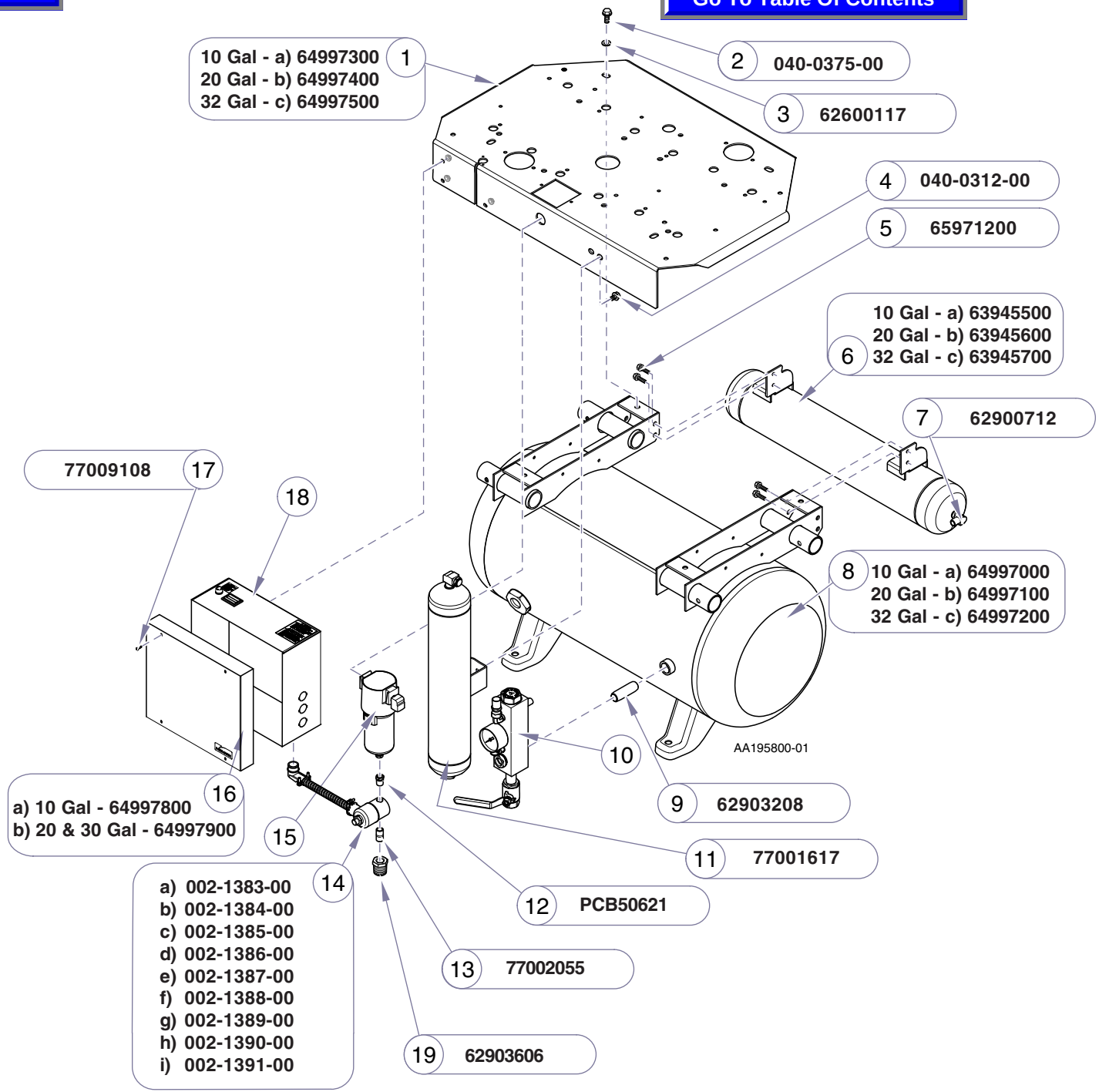

Refer To: **Go To Page:**

ClassicSeries® Specifications iv
PowerAir® Specifications v
Check Valve Manifold Assy E-13
Coalescing Filter Assy E-14
Electrical Control Box E-15*

Note: Refer to Specification Charts for each Models Gallon and Voltage.

Item	Description	Qty.
1	Saddle	1
2	Hex Flange *(3/8"-16 x 3/4")*	4
3	Flat Washer *(5/16")*	4
4	Hex Flange *(5/8"-16 x 1/2")*	2
5	Hex Flange *(5/8"-18 x 1/2")*	4
6	Purge Tank	1
7	Street Elbow *(1/4" Short)*	1
8	Tank Assembly	1
9	Nipple LG *(1/2" NPT x 21/2" LG, SS Seal)*	1
10	Manifold ..... Refer to "Check Valve Manifold"	
11	Desiccant Dryer Tank	1
12	Bushing *(1/4" x 1/8")*	1
13	Nipple, Close *(1/4" NPT)*	1
14	Solenoid Assembly (Listed by Model)	
	a) CL22	
	b) CL32	
	c) CL52	
	d) P22	
	e) P32	
	f) P52	
	g) P72	
	h) CL21	
	i) P21	
15	Coalescing Filter ..... Refer to: " Filter Assy"	
16	Electrical Box Cover	1
17	Phillips Pan HD Screw *(6-32 x 1/2")*	4
18	Control Box . Refer to: "Electrical Control Box"	
19	Bushing (RDC 1/2M X 1/4F SEAL)	1

Always Specify Model & Serial Number

Tank & Main Components

Models: *Serial Numbers:* ***All***

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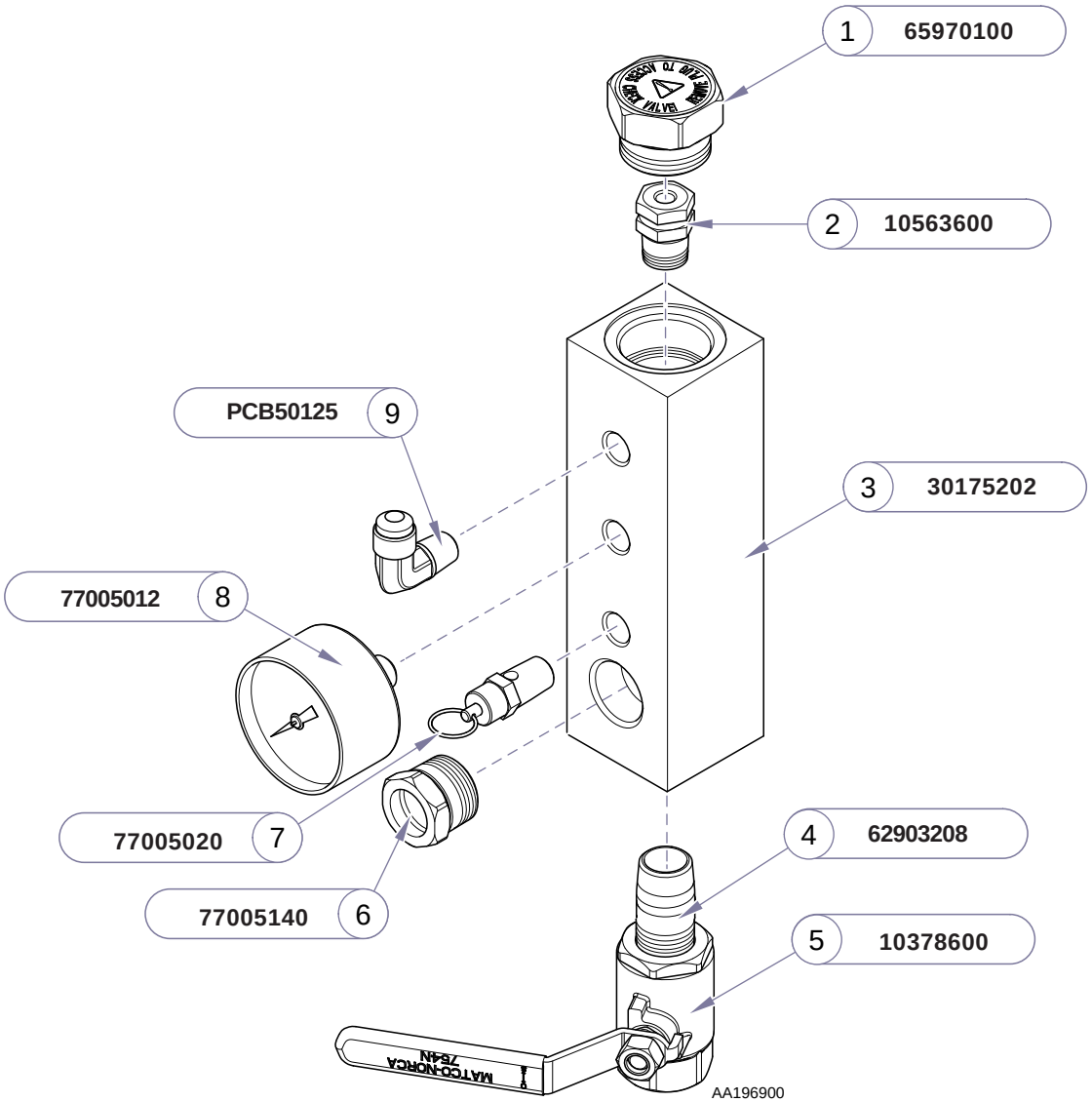

Item	Description	Qty.
1	Straight Thread Plug	1
2	Check Valve *(Replacement kit)*	1
3	Manifold Block	1
4	Nipple LG *(1/2" NPT x 2 1/2" LG)*	1
5	Ball Valve	1
6	Humidity Indicator	1
7	Air Safety Valve	1
8	Gauge, 0 - 160 psi	1
9	Elbow *(5/8"-18 x 1/4" MPT)*	1

Always Specify Model & Serial Number

Models: ***All***
Serial Numbers:

Check Valve Manifold Assembly

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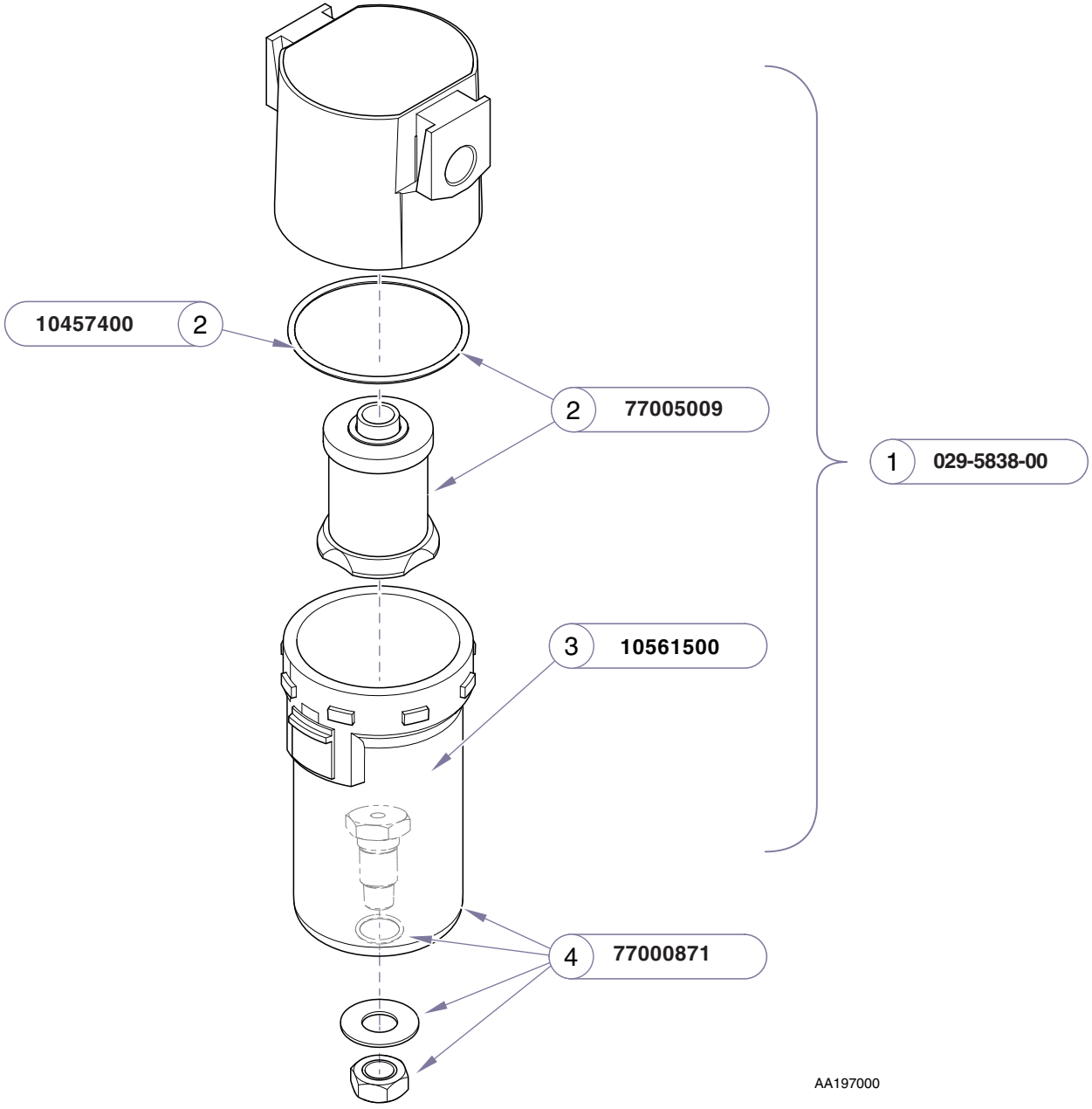

Item	Description	Qty.
1	Coalescing Filter Replacement Kit	
	• *Includes Items 2 and 4*	
2	Filter and O-ring Kit (77005009)	
	• Filter	1
	• O-Ring (By itself - 10457400)	1
3	Replacement Bowl	1
4	Replacement Fitting Kit	
	• Fitting, Filter Bowl	1
	• Hex Jam Nut (*1/2"-20 x 5/16" High)*	1
	• Washer, Flat *(.515 ID x 1.125 OD x .5)*	1
	• O-Ring *(2-015)* Viton *(V884-75)*	1

Always Specify Model & Serial Number

Coalescing Filter Assembly

Models: *Serial Numbers:* ***All***

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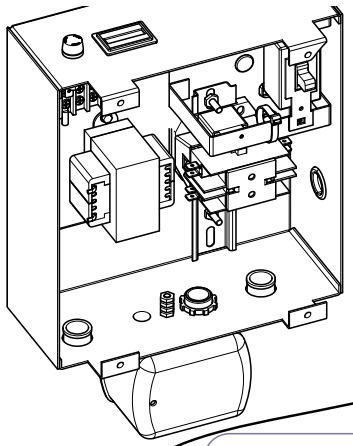

Configuration for a Single Head Compressor

Refer To: **Go To Page:**
Pressure Switch Test B-2
On/Off Switch .. Test B-23
Contactor ..... Test B-16

1 65927500
2 63882538
3 20235600
4 62984000
5 a) 64997600 b) 64997700
6 BNT20210
7 62970704
8 62503802
9 20233301 Test
10 62503801
11 015-1986-00
12 77001130 Test
13 77001094
14 015-2029-00 Test
15 62964303
6

Socket is installed on PowerAir® Models Only

Configuration Shown for Twin and Triple Head Compressors

AA197100

Item	Description	Qty.
1	Fuse Holder	1
2	Fuse, 1/3 amp	1
3	Hour Meter *(PowerAir® only)*	1
4	Socket with Wire Harness	1
5	Control Box	
	a) Single Head Models	1
	b) Twin and Triple Head Models	1
6	Nut Keps *(10/32)*	6
7	Terminal Block	1
8	Screw, Hex Head *(#8 x 5/8")*	2
9	Pressure Switch	1
10	Screw, *(#8-32 x 5/16")*	2
11	Transformer	1
12	On/Off Switch	1
13	Locknut *(1/2")*	1
14	Contactor Relay	1
15	Din-3 Rail *(5.8"L)*	1

Always Specify Model & Serial Number

Models: Serial Numbers:	**CL21** 0701L210001 thru 0901L210370	**CL22** 0701L220001 thru 0903L220294	**CL32** 0701L320001 thru 0901L320807	**CL52** 0701L520001 thru 0810CL520124	
Models: Serial Numbers:	**P21** 0703P210001 thru 0903P210361	**P22** 0703P220001 thru 0903P221139	**P32** 0703P210001 thru 0903P321137	**P52** 0703P210001 thru 0902P520467	**P72** 0703P210001 thru 0903P720190

Electrical Control Box

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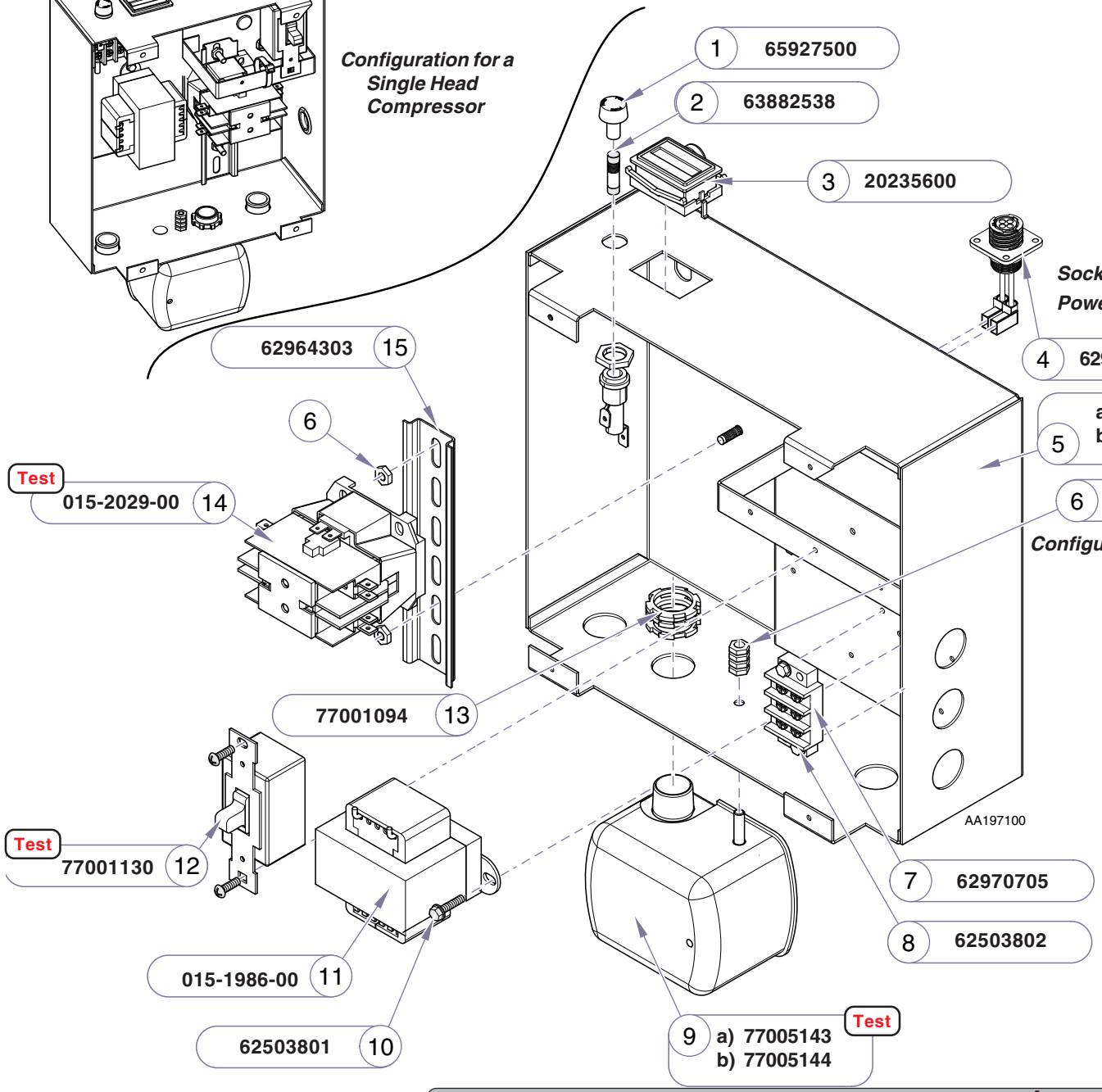
Configuration for a Single Head Compressor

Refer To: — Go To Page:

Pressure Switch Test B-2
On/Off Switch .. Test B-23
Contactor ..... Test B-16



Configuration Shown for Twin and Triple Head Compressors

Item	Description	Qty.
1	Fuse Holder	1
2	Fuse, 1/3 amp	1
3	Hour Meter *(PowerAir® only)*	1
4	Socket with Wire Harness	1
5	Control Box	
	a) Single Head Models	1
	b) Twin and Triple Head Models	1
6	Nut Keps *(10/32)*	6
7	Terminal Block	1
8	Screw, Hex Head *(#8 x 5/8")*	2
9	Pressure Switch	
	a) All CL models & P21, P22, P32,P52	1
	b) P72	1
10	Screw, *(#8-32 x 5/16")*	2
11	Transformer	1
12	On/Off Switch	1
13	Locknut *(1/2")*	1
14	Contactor Relay	1
15		1

Always Specify Model & Serial Number

Models: / Serial Numbers:	CL21	CL22	CL32	CL52	All
	0902L210372 thru Present	0903L220296 thru Present	0901L320813 thru Present	0810L520126 thru Present	V785000 thru Present

Models: / Serial Numbers:	P21	P22	P32	P52	P72
	0904P210365 thru Present	0904P221146 thru Present	0904P321145 thru Present	0904P520474 thru Present	0903P720191 thru Present

Electrical Control Box

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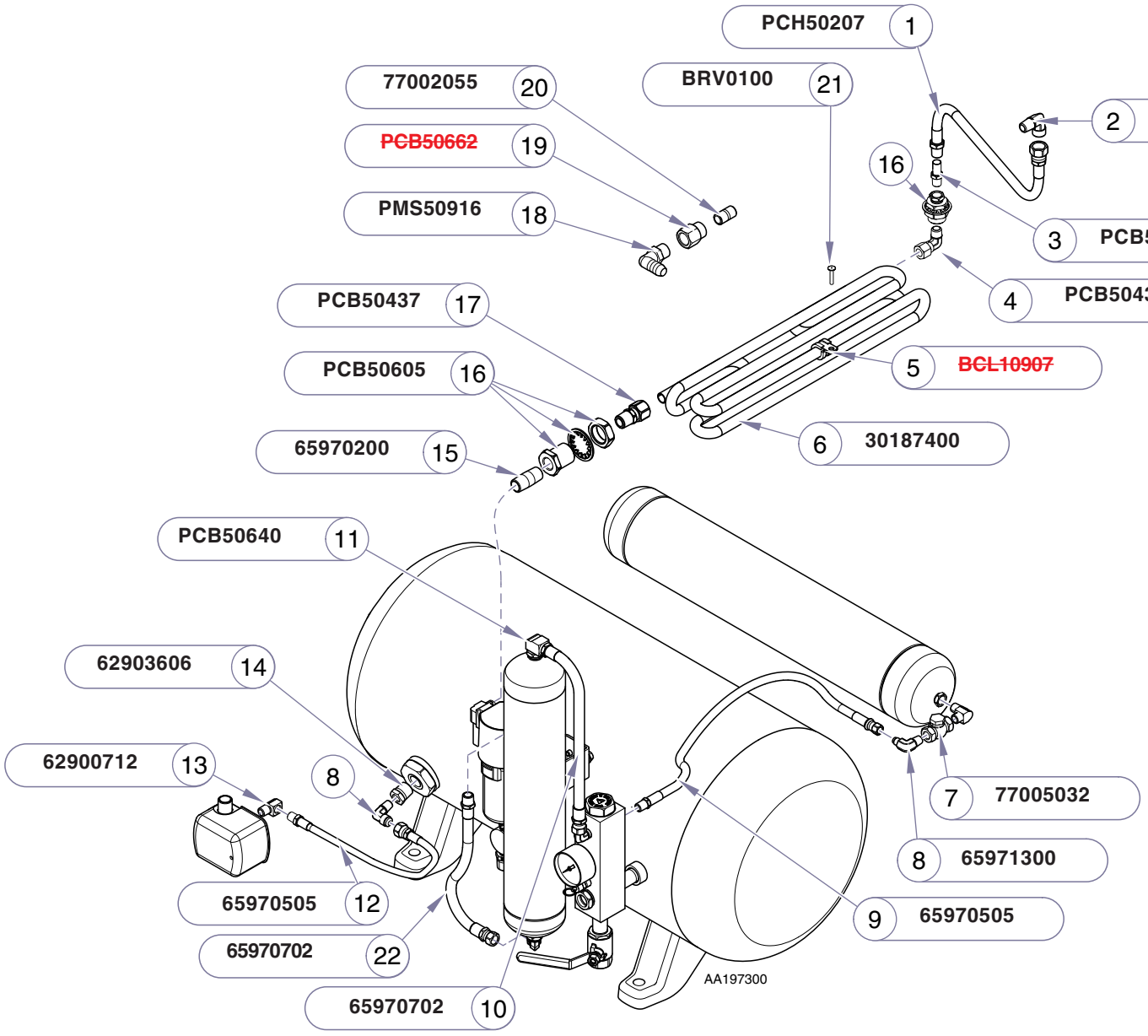

Item	Description	Qty.
1	Air Hose	1
2	Elbow *(5/8"-18 x 3/8" MPT)*	1
3	Bushing *(3/" x 1/4")*	1
4	MPT EL *(1/2" CA x 3/8")*	1
5	Manifold Clamp	1
6	Pre-Cooler Tube	1
7	Purge Valve	1
8	Elbow *(7/16"-20 x 1/4" MPT)*	2
9	Hose Assembly *(1/4" NPT, 16" L)*	2
10	Hose Assembly *(3/8" NPT, 16" L)*	1
11	Street Elbow *(3/8")*	1
12	Hose Assembly *(1/4" NPT, 16"L)*	1
13	Street Elbow *(1/4" NPT with Sealant)*	1
14	Bushing *(1/2" MNPT x 1/4"FNPT, Seal)*	1
15	Nipple *(3/8" NPT x 1 1/2" Brass)*	1
16	Anchor Bulkhead	2
17	MPT ST *(1/2" CA x 3/8")*	1
18	Elbow *(1/2" Hose Con x 3/8" MPT)*	1
19	Reducer *(3/8" x 1/4")*	1
20	Nipple Close *(1/4" NPT)*	1
21	Pop Rivet *(.150 x .860)*	1
22	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***CL22*** *0701L220001 thru Present*	***CL21*** *0701L210001 thru Present*	***CL21*** *V785000 thru Present*

Pneumatic Tubes and Hoses

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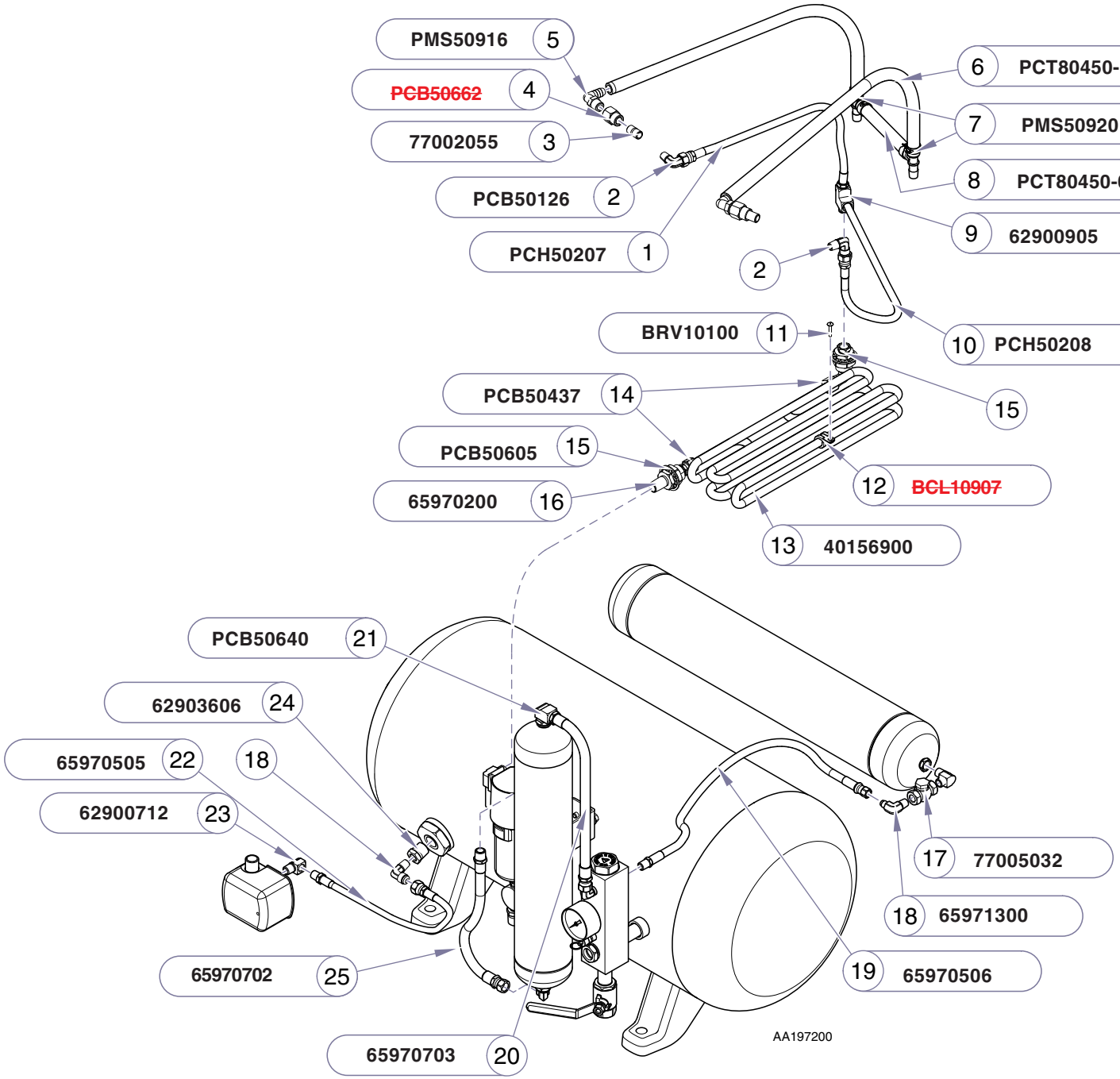

Item	Description	Qty.
1	Air Hose	1
2	Elbow *(5/8"-18 x 1/4"MPT)*	2
3	Nipple Close *(1/4" NPT)*	1
4	Reducer (3/8" x 1/4")	1
5	Elbow *(1/2" x 3/8"MPT)*	1
6	Clear Hose *(1/2" Dia x 26" L)*	1
7	Tee Hose Connector *(1/2")*	2
8	Clear Hose *(1/2" Dia x 9 3/4" L)*	1
9	Pipe Tee *(1/4"M x 1/4"F x 1/4"F)*	1
10	Air Hose	1
11	Pop Rivet *(.150 x .860)*	1
12	Manifold Clamp	1
13	Pre-Cooler Tube	1
14	MPT ST *(1/2" CA x 3/8")*	2
15	Anchor Bulkhead	2
16	Nipple *(3/8" NPT x 1 1/2" Brass)*	1
17	Purge Valve	1
18	Elbow *(7/16"-20 x 1/4"MPT)*	2
19	Hose Assembly *(1/4"NPT, 21" L)*	1
20	Hose Assembly *(3/8" NPT, 21" L)*	1
21	Street Elbow *(3/8")*	1
22	Hose Assembly *(1/4" NPT, 16" L)*	1
23	Street Elbow *(1/4" NPT with Sealant)*	1
24	RDC Bushing *(1/2" x 1/4", Seal)*	1
25	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Pneumatic Tubes and Hoses

Models: *Serial Numbers:* | ***CL32*** *0701L320001 thru Present* | ***CL32*** *V785000 thru Present*

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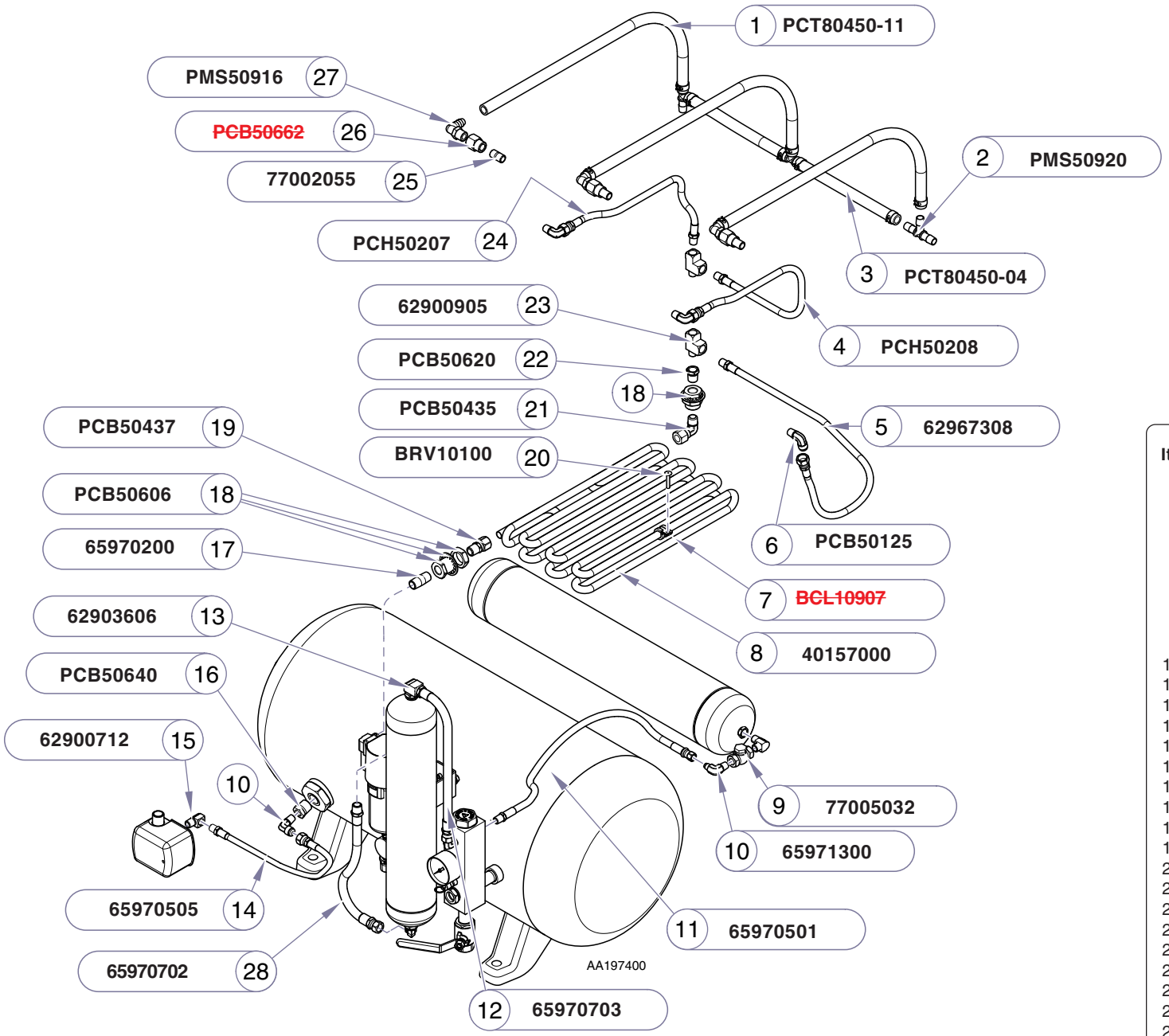

Item	Description	Qty.
1	Hose *(1/2" x 26" L)*	3
2	Hose Tee Connector *(1/2")*	3
3	Hose *(1/2" x 9 3/4")*	2
4	Air Hose	1
5	Hose Assembly *(1/4"MNPT, 28"L)*	1
6	Elbow *(5/8"-18 x 1/4" MPT*	3
7	Manifold Clamp	1
8	Pre-Cooler	1
9	Purge Valve	1
10	Elbow *(7/16"-20 x 1/4" MPT)*	2
11	Hose *(1/4" NPT, 5/16"-18 ST THD, 26"L)*	1
12	Hose Assembly *(3/8" MPT, 21"L)*	1
13	Street Elbow *(3/8")*	1
14	Hose Assembly *(1/4" NPT, 16"L)*	1
15	Street Elbow *(1/4" NPT with Sealant)*	1
16	Bushing *(1/2"MNPT x 1/4"FNPT with Seal)*	1
17	Nipple *(3/8" NPT x 1 1/2" Brass)*	1
18	Anchor Bulkhead *(1/4")*	1
19	MPT ST *(1/2" CA x 3/8")*	1
20	Pop Rivet *(.150 x .860)*	1
21	MPT EL *(1/2" CA x 3/8")*	1
22	Bushing *(3/8" x 1/4")*	1
23	Pipe Tee *(1/4"M x 1/4"F x 1/4"F)*	2
24	Air Hose	1
25	Nipple Close *(1/4" NPT)*	3
26	Reducer *(3/8" x 1/4")*	3
27	Elbow *(1/2"CON x 3/8" MPT)*	3
28	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*

CL52	***CL52***
0701L520001 thru Present	*V785000 thru Present*

Pneumatic Tubes and Hoses

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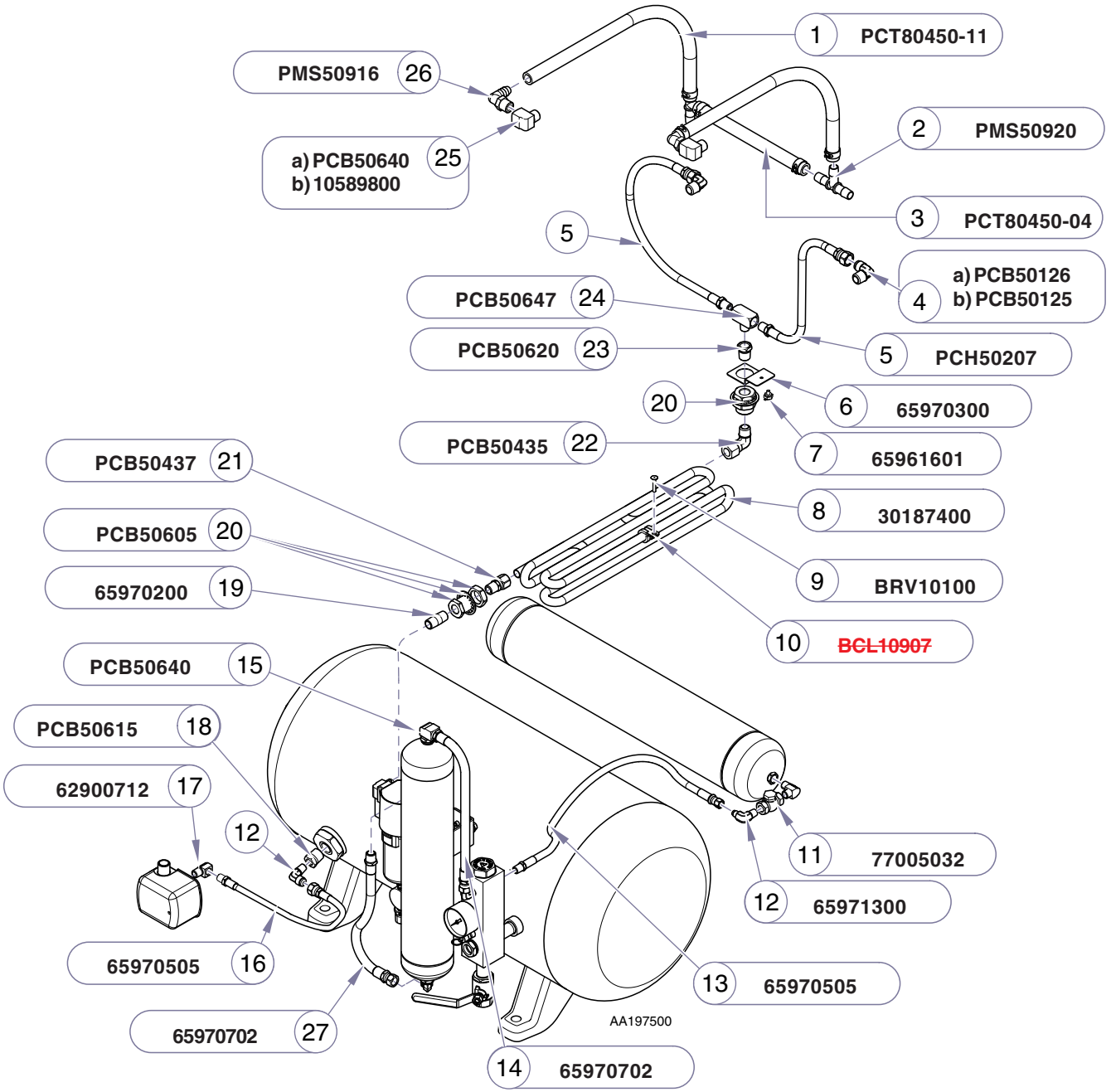

Item	Description	Qty.
1	Hose *(1/2" x 26" L)*	2
2	Hose Connector *(1/2")*	2
3	Hose *(1/2" x 9 3/4" L)*	1
4	Elbow	
	a) (Thomas Heads) *(5/8"-18 x 3/8"MPT)*	1
	b) (Gast Heads) *(5/8"-18 x 1/4"MPT)*	*1*
5	Air Hose	2
6	Thermal Switch Bracket	1
7	Thermal Switch	1
8	Pre-Cooler	1
9	Pop Rivet *(.150 x .860)*	1
10	Manifold Clamp	1
11	Purge Valve	1
12	Elbow *(7/16"-20 x 1/4" MPT)*	2
13	Hose Assembly *(1/4" NPT, 21"L)*	1
14	Hose Assembly *(3/8" NPT, 16"L)*	1
15	Bushing *(1/4" FPT x 1/2"MPT)*	1
16	Hose Assembly *(1/4"NPT, 16"L)*	1
17	Street Elbow *(1/4" NPT with Sealant)*	1
18	Bushing *(1/2"MNPT x 1/4"FNPT with Seal)*	1
19	Nipple *(3/8" NPT x 1 1/2" Brass)*	1
20	Anchor Bulkhead *(1/4")*	1
21	MPT ST *(1/2" CA x 3/8")*	1
22	MPT EL *(1/2" CA x 3/8")*	1
23	Bushing *(3/8" x 1/4")*	1
24	Tee Run *(1/4")*	1
25	Street EL	
	(Thomas Heads) (3/8")	1
	(Gast Heads) (1/4")	1
26	Elbow *(1/2"CON x 3/8" MPT)*	2
27	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Pneumatic Tubes and Hoses

Models:	***P21***	***P22***
Serial Numbers:	*0703P210001 thru V1700965*	*0703P220001 thru V1701032*

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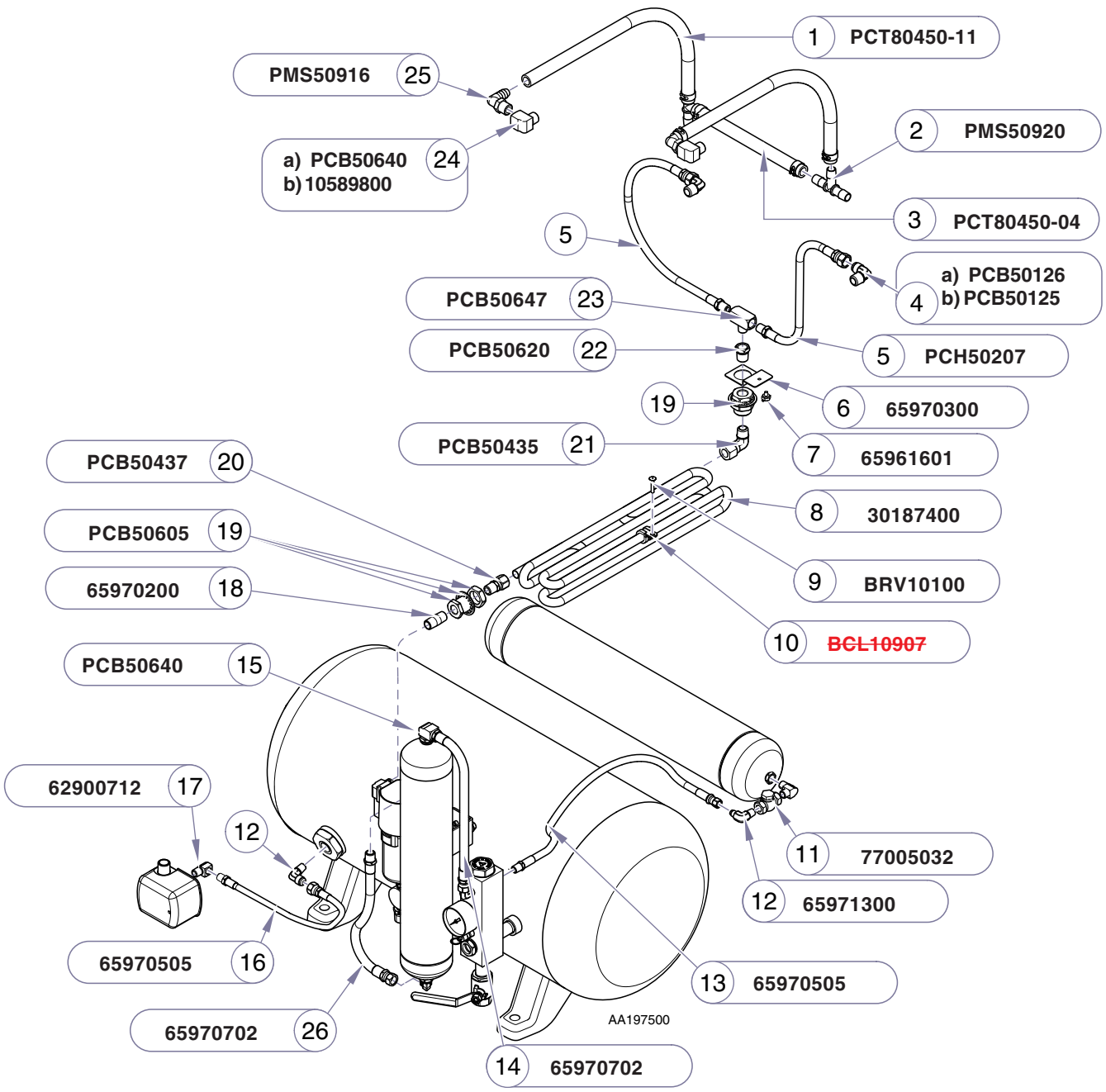

Item	Description	Qty.
1	Hose *(1/2" x 26" L)*	2
2	Hose Connector *(1/2")*	2
3	Hose *(1/2" x 9 3/4" L)*	1
4	Elbow	
	a) (Thomas Heads) *(5/8"-18 x 3/8"MPT)*	1
	b) (Gast Heads) *(5/8"-18 x 1/4"MPT)*	*1*
5	Air Hose	2
6	Thermal Switch Bracket	1
7	Thermal Switch	1
8	Pre-Cooler	1
9	Pop Rivet *(.150 x .860)*	1
10	Manifold Clamp	1
11	Purge Valve	1
12	Elbow *(7/16"-20 x 1/4" MPT)*	2
13	Hose Assembly *(1/4" NPT, 21"L)*	1
14	Hose Assembly *(3/8" NPT, 16"L)*	1
15	Bushing *(1/4" FPT x 1/2"MPT)*	1
16	Hose Assembly *(1/4"NPT, 16"L)*	1
17	Street Elbow *(1/4" NPT with Sealant)*	1
18	Nipple *(3/8" NPT x 1 1/2" Brass)*	1
19	Anchor Bulkhead *(1/4")*	1
20	MPT ST *(1/2" CA x 3/8")*	1
21	MPT EL *(1/2" CA x 3/8")*	1
22	Bushing *(3/8" x 1/4")*	1
23	Tee Run *(1/4")*	1
24	Street EL	
	(Thomas Heads) (3/8")	1
	(Gast Heads) (1/4")	1
25	Elbow *(1/2"CON x 3/8" MPT)*	2
26	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***P21*** *V1700965 thru Present*	***P22*** *V1701032 thru Present*

Pneumatic Tubes and Hoses **E-19.1**

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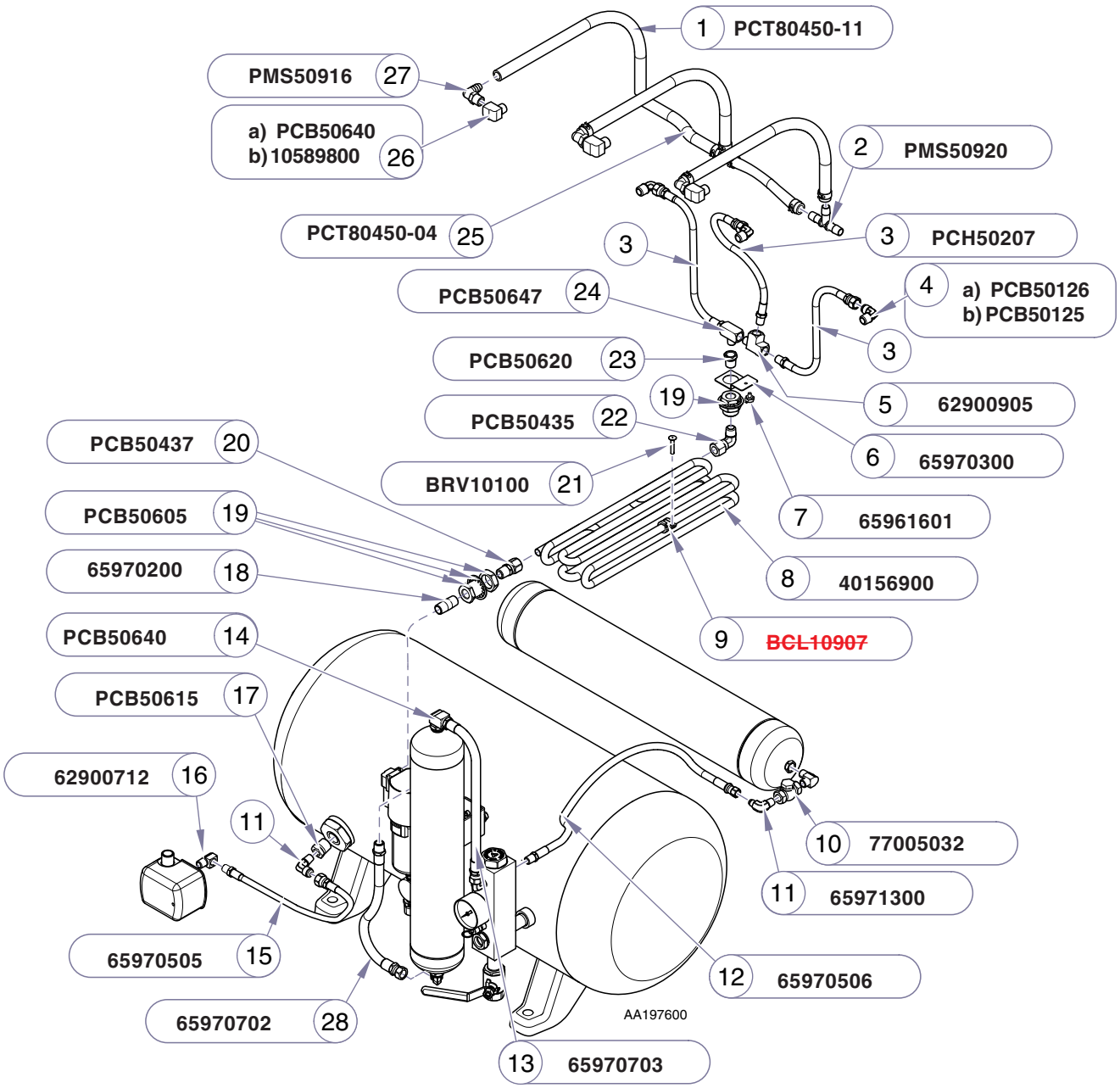

Item	Description	Qty.
1	Hose *(1/2" x 26" L)*	3
2	Hose Connector *(1/2")*	3
3	Hose *(1/2" x 9 3/4" L)*	3
4	Elbow	
	a) (Thomas Heads) *(5/8"-18 x 3/8"MPT)*	1
	b) (Gast Heads) *(5/8"-18 x 1/4"MPT)*	*1*
5	Pipe Tee *(1/4"M x 1/4F x 1/4F)*	1
6	Thermal Switch Bracket	1
7	Thermal Switch	1
8	Pre-Cooler	1
9	Manifold Clamp	1
10	Purge Valve	1
11	Elbow *(7/16"-20 x 1/4"MPT)*	2
12	Hose Assembly *(1/4" NPT, 21"L)*	1
13	Hose Assembly *(3/8"NPT, 21"L)*	1
14	Street EL *(3/8")*	1
15	Hose Assembly *(1/4"NPT, 16"L)*	1
16	Elbow Street *(1/4"NPT with Sealant)*	1
17	Bushing *(1/2" x 3/8")*	1
18	Nipple *(3/8"NPT x 1 1/2" Brass)*	1
19	Anchor Bulkhead	2
20	MPT ST *(1/2" CA x 3/8")*	1
21	Pop Rivet *(.150 x .860)*	1
22	MPT EL *(1/2" CA x 3/8")*	1
23	Bushing *(3/8" x 1/4")*	1
24	Tee Run *(1/4")*	1
25	Hose *(1/2", 9 3/7 L)*	2
26	Street EL	
	(Thomas Heads) (3/8")	1
	(Gast Heads) (1/4")	1
27	Elbow *(1/2"CON x 3/8" MPT)*	2
28	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Models:	P32	P32
Serial Numbers:	0703P320001 thru V1703515	V785000 thru V1703515

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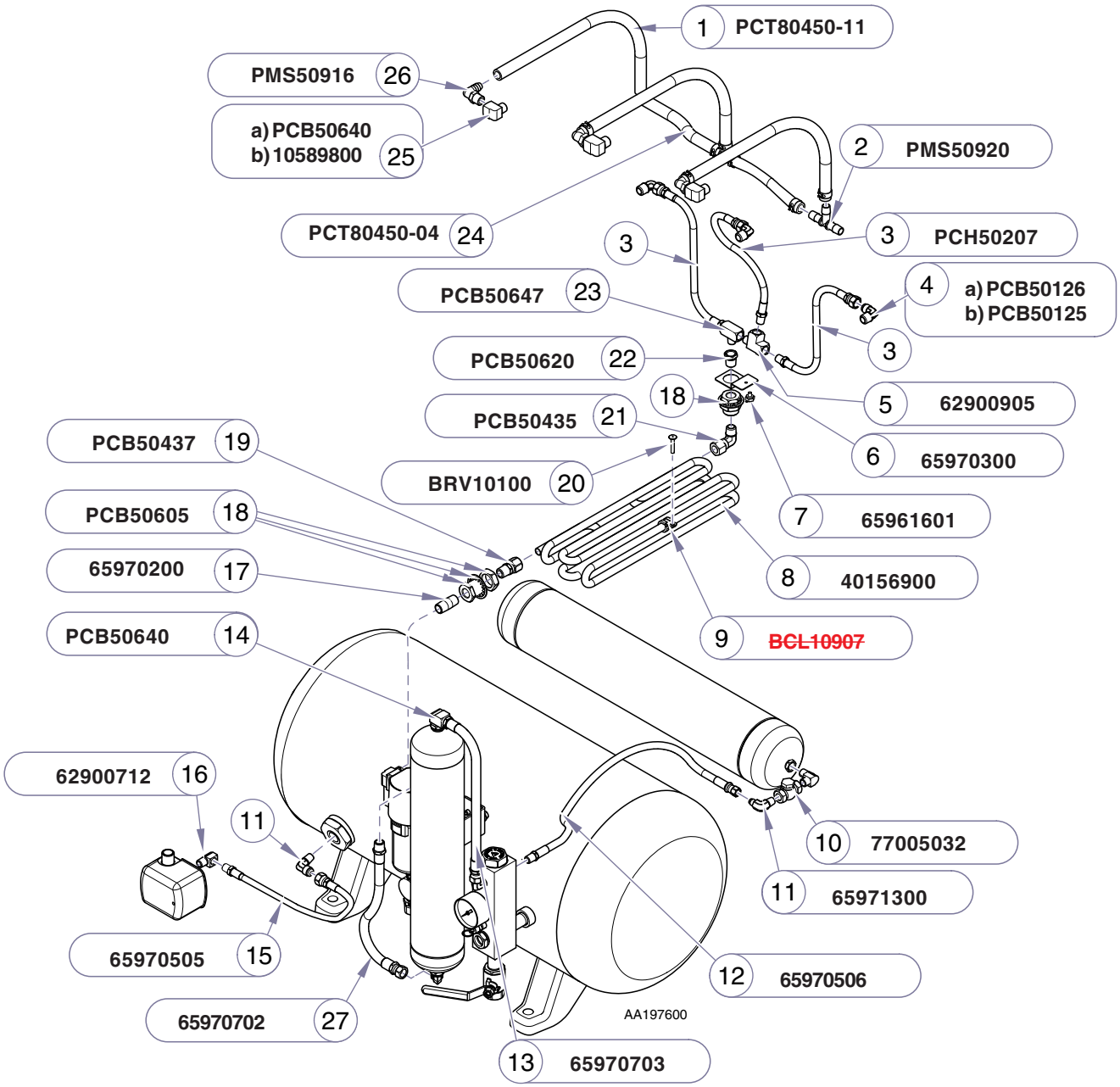

Item	Description	Qty.
1	Hose *(1/2" x 26" L)*	3
2	Hose Connector *(1/2")*	3
3	Hose *(1/2" x 9 3/4" L)*	3
4	Elbow	
	a) (Thomas Heads) *(5/8"-18 x 3/8"MPT)*	1
	b) (Gast Heads) *(5/8"-18 x 1/4"MPT)*	*1*
5	Pipe Tee *(1/4"M x 1/4F x 1/4F)*	1
6	Thermal Switch Bracket	1
7	Thermal Switch	1
8	Pre-Cooler	1
9	Manifold Clamp	1
10	Purge Valve	1
11	Elbow *(7/16"-20 x 1/4"MPT)*	2
12	Hose Assembly *(1/4" NPT, 21"L)*	1
13	Hose Assembly *(3/8"NPT, 21"L)*	1
14	Street EL *(3/8")*	1
15	Hose Assembly *(1/4"NPT, 16"L)*	1
16	Elbow Street *(1/4"NPT with Sealant)*	1
17	Nipple *(3/8"NPT x 1 1/2" Brass)*	1
18	Anchor Bulkhead	2
19	MPT ST *(1/2" CA x 3/8")*	1
20	Pop Rivet *(.150 x .860)*	1
21	MPT EL *(1/2" CA x 3/8")*	1
22	Bushing *(3/8" x 1/4")*	1
23	Tee Run *(1/4")*	1
24	Hose *(1/2", 9 3/7 L)*	2
25	Street EL	
	(Thomas Heads) (3/8")	1
	(Gast Heads) (1/4")	1
26	Elbow *(1/2"CON x 3/8" MPT)*	2
27	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Models: ***P32***
Serial Numbers: *V1703515 thru Present*

Pneumatic Tubes and Hoses

E-20.1

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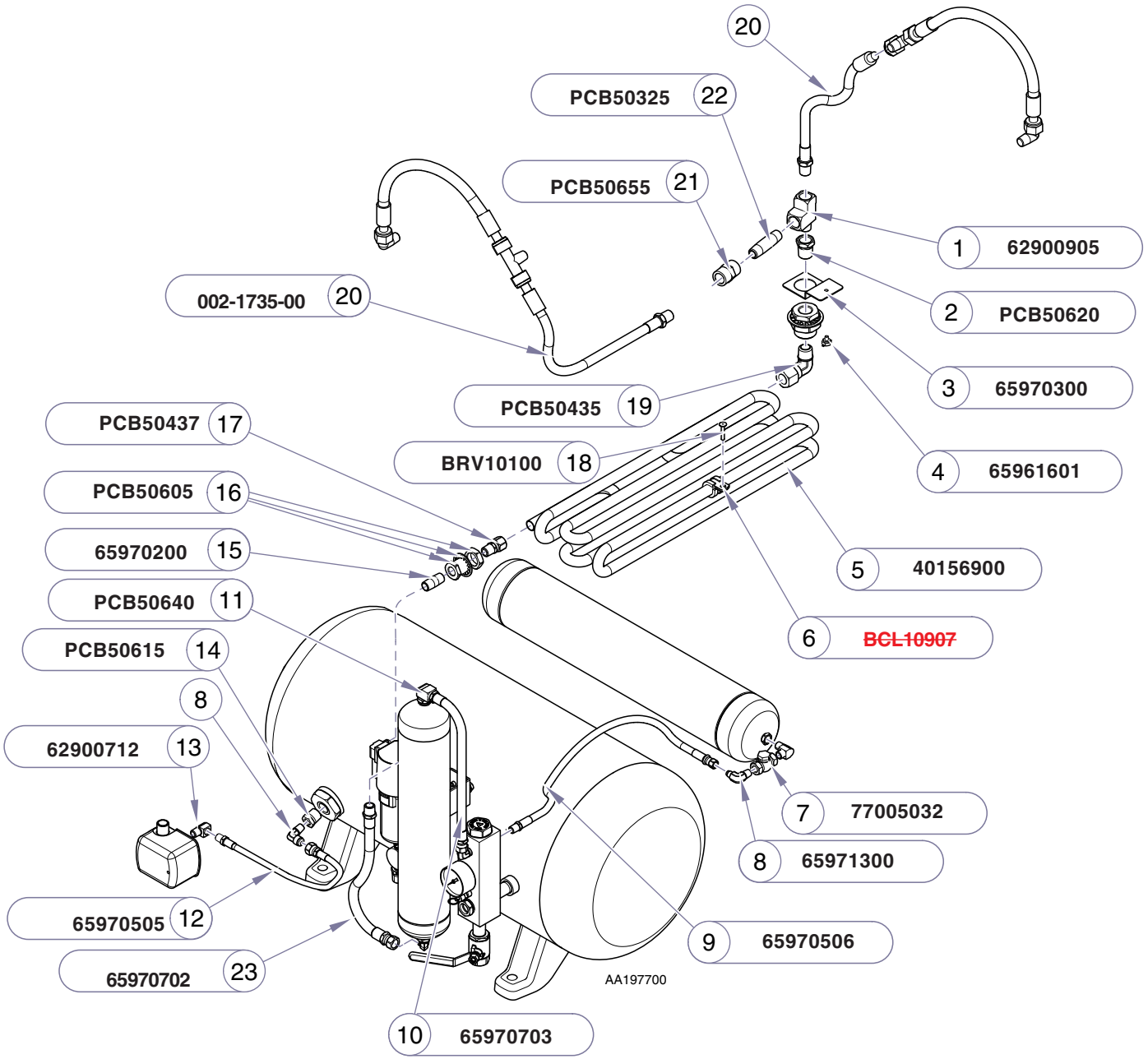

Item	Description	Qty.
1	Pipe Tee (1/4M x 1/4F)	1
2	Bushing (3/8" x 1/4")	1
3	Thermal Switch Bracket	1
4	Thermal Switch	1
5	Pre-Cooler	1
6	Manifold Clamp	1
7	Purge Valve	1
8	Elbow (7/16"-20 x 1/4" MPT)	2
9	Hose Assembly (1/4" NPT, 21" L)	1
10	Hose Assembly (3/8"NPT, 21" L)	1
11	Street Elbow (3/8")	1
12	Hose Assembly (1/4"NPT, 16" L)	1
13	Street Elbow (1/4"NPT with Sealant)	1
14	Bushing (1/2" x 3/8")	1
15	Nipple (3/8" x 1 1/2")	1
16	Anchor Bulkhead	2
17	MPT ST (1/2"CA x 3/8")	1
18	Pop Rivet (.150 x .860)	1
19	MPT Elbow (1/2"CA x 3/8")	1
20	Hose Assembly (3/8"T x 1/4"MNPT, 15"L)	2
21	Coupling (1/4")	1
22	Nipple (1/4" x 20)	1
23	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Pneumatic Tubes and Hoses

Models: *Serial Numbers:*

P52	***P52***
0701P520001 thru V1703322	*V785000 thru V1703322*

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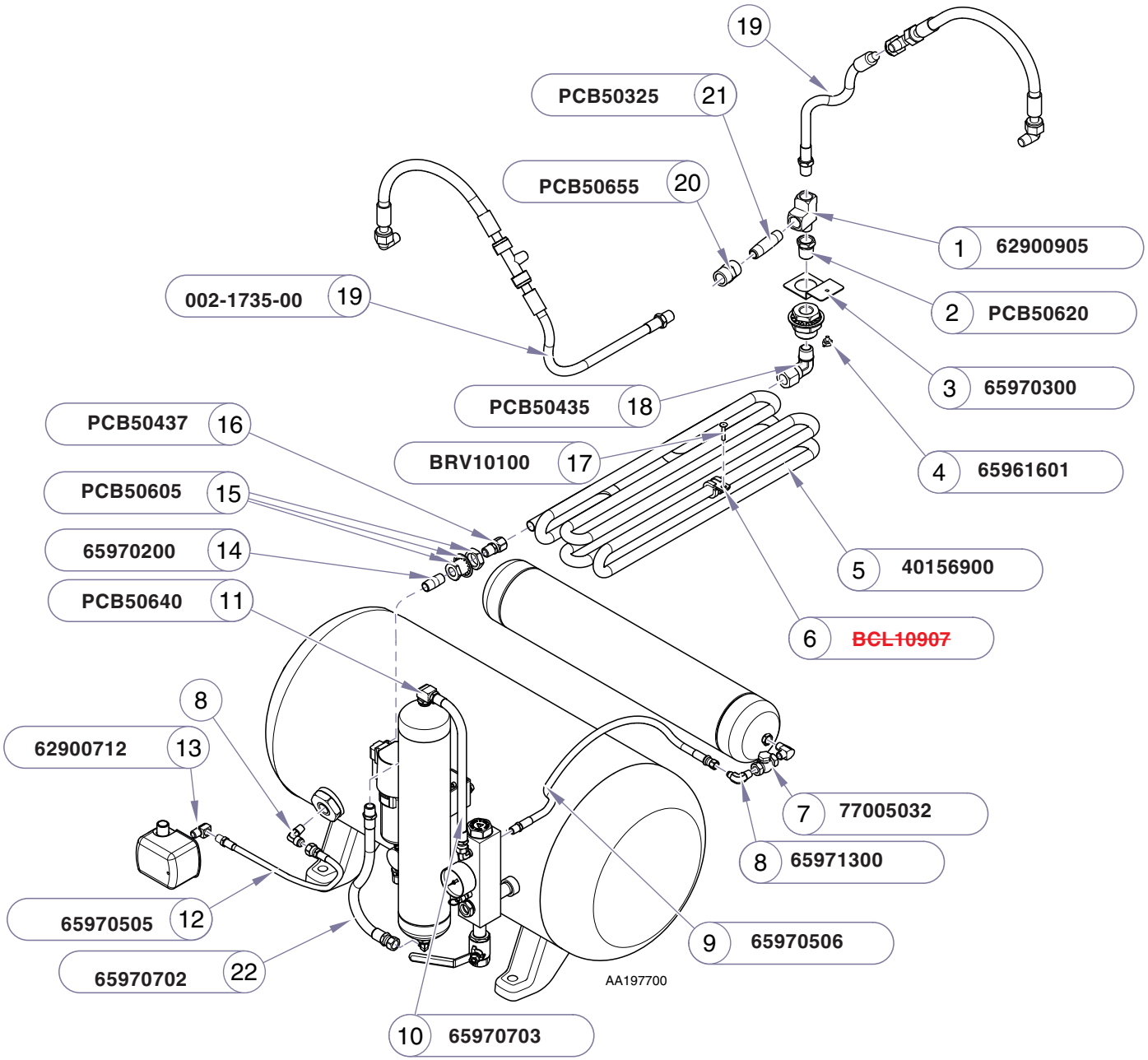

Item	Description	Qty.
1	Pipe Tee (1/4M x 1/4F)	1
2	Bushing (3/8" x 1/4")	1
3	Thermal Switch Bracket	1
4	Thermal Switch	1
5	Pre-Cooler	1
6	Manifold Clamp	1
7	Purge Valve	1
8	Elbow (7/16"-20 x 1/4" MPT)	2
9	Hose Assembly (1/4" NPT, 21" L)	1
10	Hose Assembly (3/8"NPT, 21" L)	1
11	Street Elbow (3/8")	1
12	Hose Assembly (1/4"NPT, 16" L)	1
13	Street Elbow (1/4"NPT with Sealant)	1
14	Nipple (3/8" x 1 1/2")	1
15	Anchor Bulkhead	2
16	MPT ST (1/2"CA x 3/8")	1
17	Pop Rivet (.150 x .860)	1
18	MPT Elbow (1/2"CA x 3/8")	1
19	Hose Assembly (3/8"T x 1/4"MNPT, 15"L)	2
20	Coupling (1/4")	1
21	Nipple (1/4" x 20)	1
22	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Models: *P52*
Serial Numbers: *V1703322 thru Present*

Pneumatic Tubes and Hoses

E-21.1

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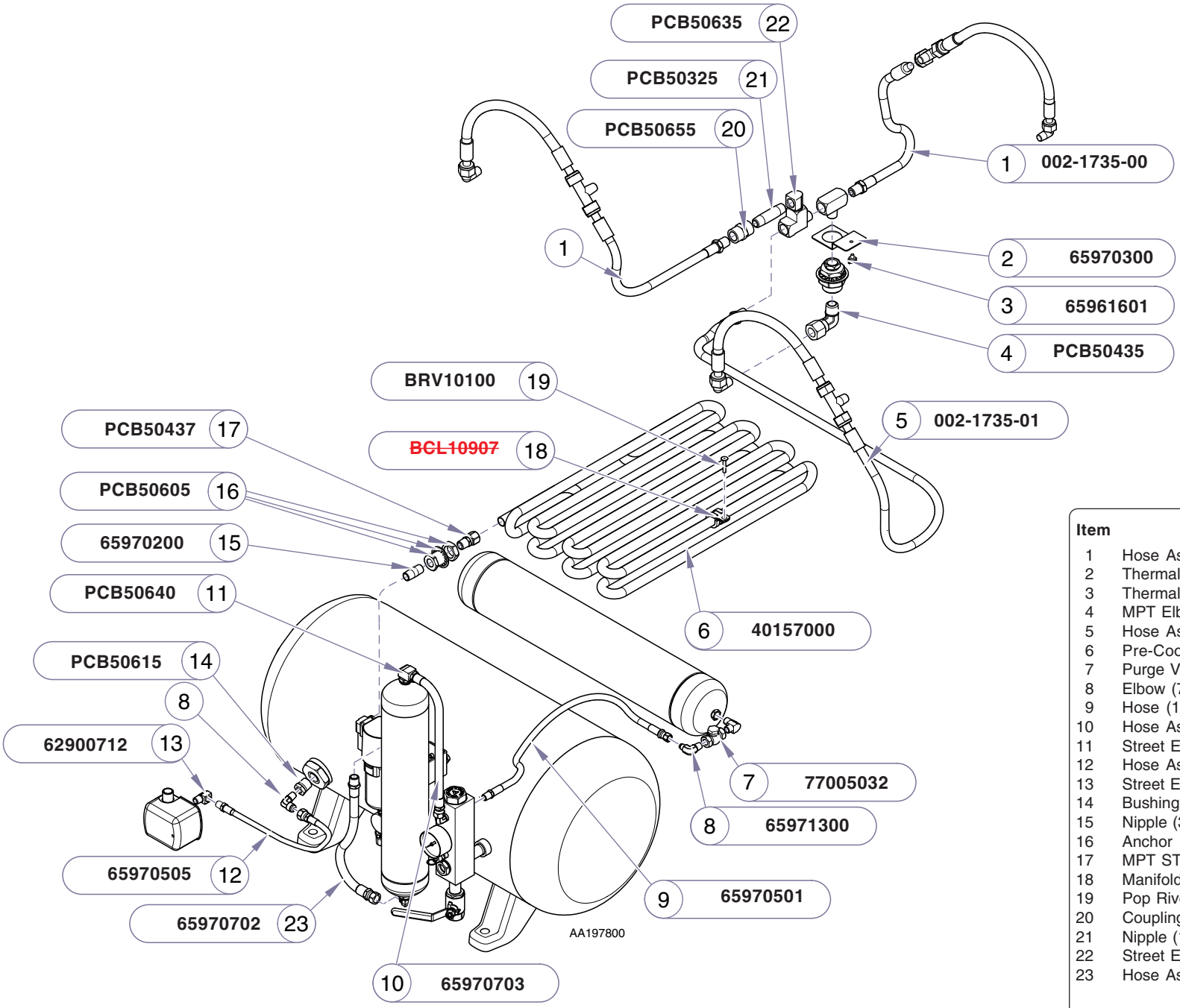

Item	Description	Qty.
1	Hose Assembly (3/8" x 1/4"MNPT, 15"L)	1
2	Thermal Switch Bracket	1
3	Thermal Switch	1
4	MPT Elbow (1/2"CA x 3/8")	1
5	Hose Assembly (3/8"T x 1/4"MNPT, 36"L)	1
6	Pre-Cooler	1
7	Purge Valve	1
8	Elbow (7/16"-20 x 1/4" MPT)	2
9	Hose (1/4"NPT, 5/16"-18, 26"L)	1
10	Hose Assembly (3/8"NPT, 21" L)	1
11	Street Elbow (3/8")	1
12	Hose Assembly (1/4"NPT, 16" L)	1
13	Street Elbow (1/4"NPT with Sealant)	1
14	Bushing (1/2" x 3/8")	1
15	Nipple (3/8" x 1 1/2")	1
16	Anchor Bulkhead	2
17	MPT ST (1/2"CA x 3/8")	1
18	Manifold Clamp	1
19	Pop Rivet (.150 x .860)	1
20	Coupling (1/4")	1
21	Nipple (1/4" x 20)	1
22	Street Elbow (1/4" Short)	1
23	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Pneumatic Tubes and Hoses

Models: Serial Numbers:	***P72*** *0701P720001 thru V1702887*	***P72*** *V785000 thru V1702887*

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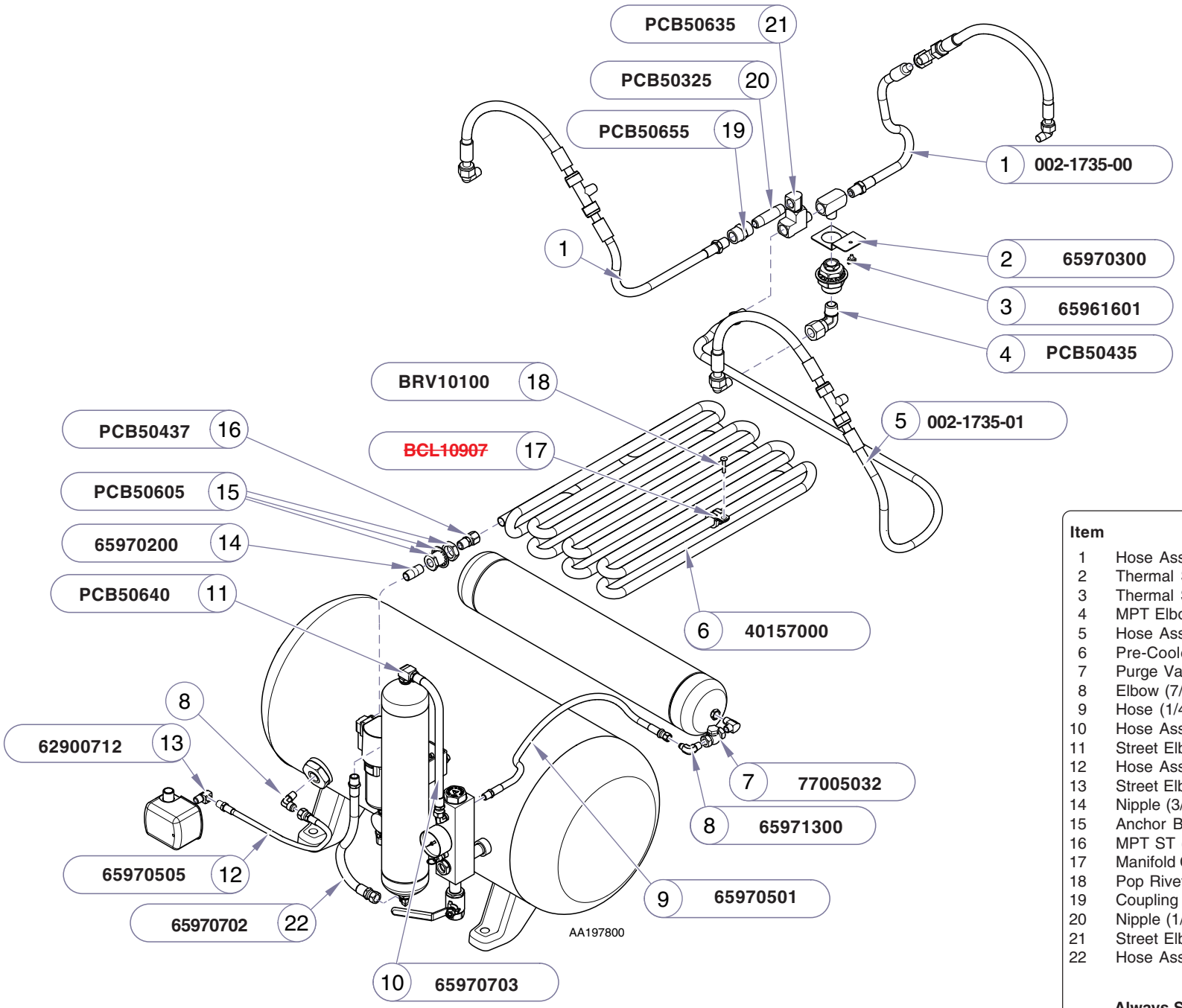

Item	Description	Qty.
1	Hose Assembly (3/8" x 1/4"MNPT, 15"L)	1
2	Thermal Switch Bracket	1
3	Thermal Switch	1
4	MPT Elbow (1/2"CA x 3/8")	1
5	Hose Assembly (3/8"T x 1/4"MNPT, 36"L)	1
6	Pre-Cooler	1
7	Purge Valve	1
8	Elbow (7/16"-20 x 1/4" MPT)	2
9	Hose (1/4"NPT, 5/16"-18, 26"L)	1
10	Hose Assembly (3/8"NPT, 21" L)	1
11	Street Elbow (3/8")	1
12	Hose Assembly (1/4"NPT, 16" L)	1
13	Street Elbow (1/4"NPT with Sealant)	1
14	Nipple (3/8" x 1 1/2")	1
15	Anchor Bulkhead	2
16	MPT ST (1/2"CA x 3/8")	1
17	Manifold Clamp	1
18	Pop Rivet (.150 x .860)	1
19	Coupling (1/4")	1
20	Nipple (1/4" x 20)	1
21	Street Elbow (1/4" Short)	1
22	Hose Assembly *(3/8" NPT, 16" L)*	1

Always Specify Model & Serial Number

Models: *P72*
Serial Numbers: *V1702887 thru Present*

Pneumatic Tubes and Hoses

E-22.1

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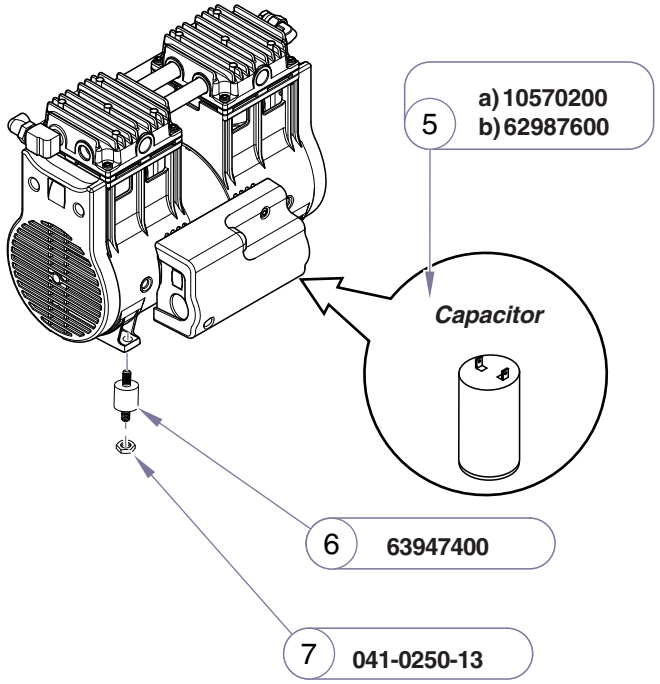
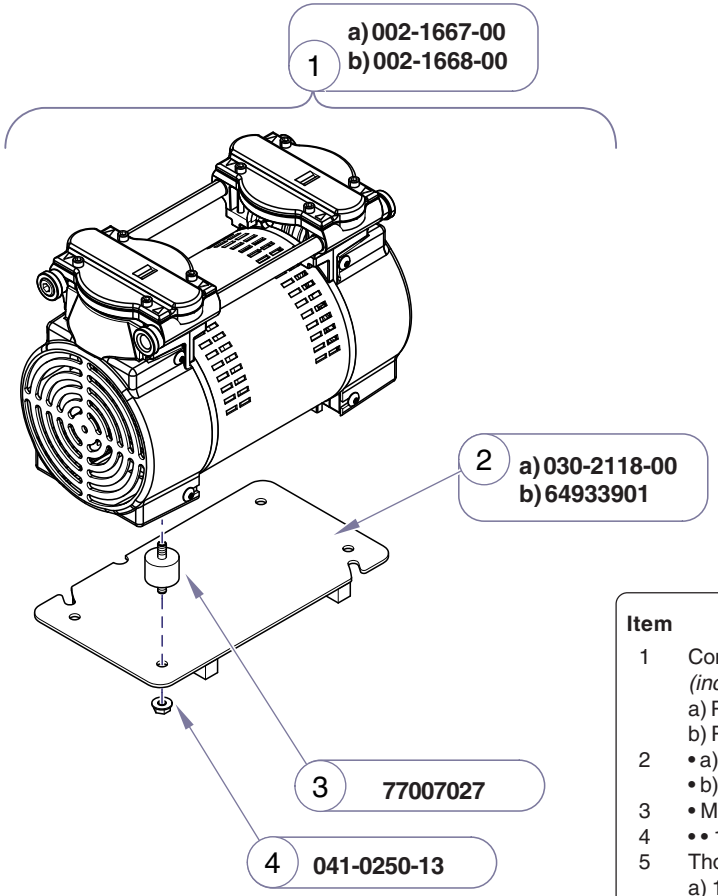
Note
208-230V Gast heads standard on units after serial number V1368137.
115V Gast heads standard on units after serial number V1393525.

Thomas Head

Note
Older style Thomas Head can be replaced with new style Gast head.



Gast Head



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Note
Rebuild kit parts can not be ordered separately.

Item	Description	Qty.
1	Compressor Head Replacement *(includes item # 2 thru 4)*	
	a) P21 (115V)	1
	b) P22 & P32 (208V-230V)	1
2	• a) Adapter Plate (Thomas Replacement)	1
	• b) Mounting Plate (Gast Replacement)	1
3	• Mounting Feet (includes item #4)	1
4	• • 1/4"-20 Hex Flange Nut	1
5	Thomas Head Capacitor	1
	a) 115 VAC Models	1
	b) 208-230 VAC Models	1
6	Mounting Feet (includes item #7)	1 set of 4
7	• 1/4"-20 Hex Flange Nut	1
	Not Shown	
8	Compressor Head Rebuild Kit	
	77001616 *(Thomas Head only)*	1
	ACA86075 *(Gast Head only)*	*1*
9	015-3308-00 Thomas Black Fan Replacement	1
	015-3307-00	
10	Thomas White Fan Replacement	1

Always Specify Model & Serial Number

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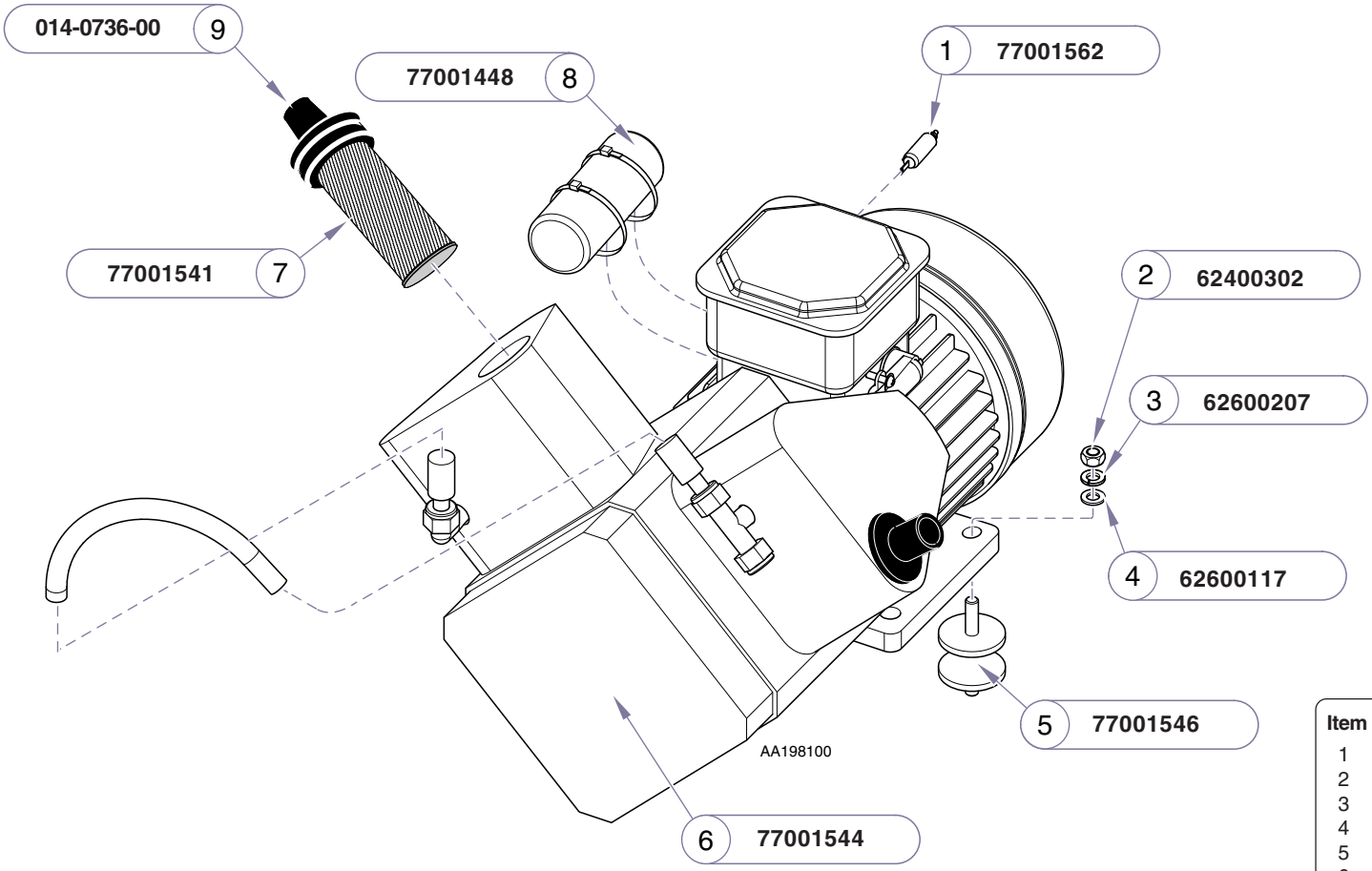

Item	Description	Qty.
1	Circuit Breaker, 11 AMP	1
2	Hex Nut *(M8 x 1 1/4")*	3 per Head
3	Lock Washer *(5/16")*	3 per Head
4	Flat Washer *(5/16")*	3 per Head
5	Mounts (pkg of 3)	1 per head
6	Compressor Head	
	P52	2
	P72	3
7	Intake Air Filter	2 Per Head
8	Start Capacitor	1 Per Head
9	Air Intake Nipple	2 Per Head
	Not Shown	
10	***77001450*** *- Reed Valve Kit*	
	•Thin Teflon Gasket	
	•Valve Plate Assembly	
	•Thick Teflon Gasket	
	• Spacer Plate	
	•Small O-Ring	

Always Specify Model & Serial Number

Models: *Serial Numbers:*	***P52*** *0701P520001 thru Present*	***P72*** *0701P720001 thru Present*	***P72*** *V785000 thru Present*

Compressor Head

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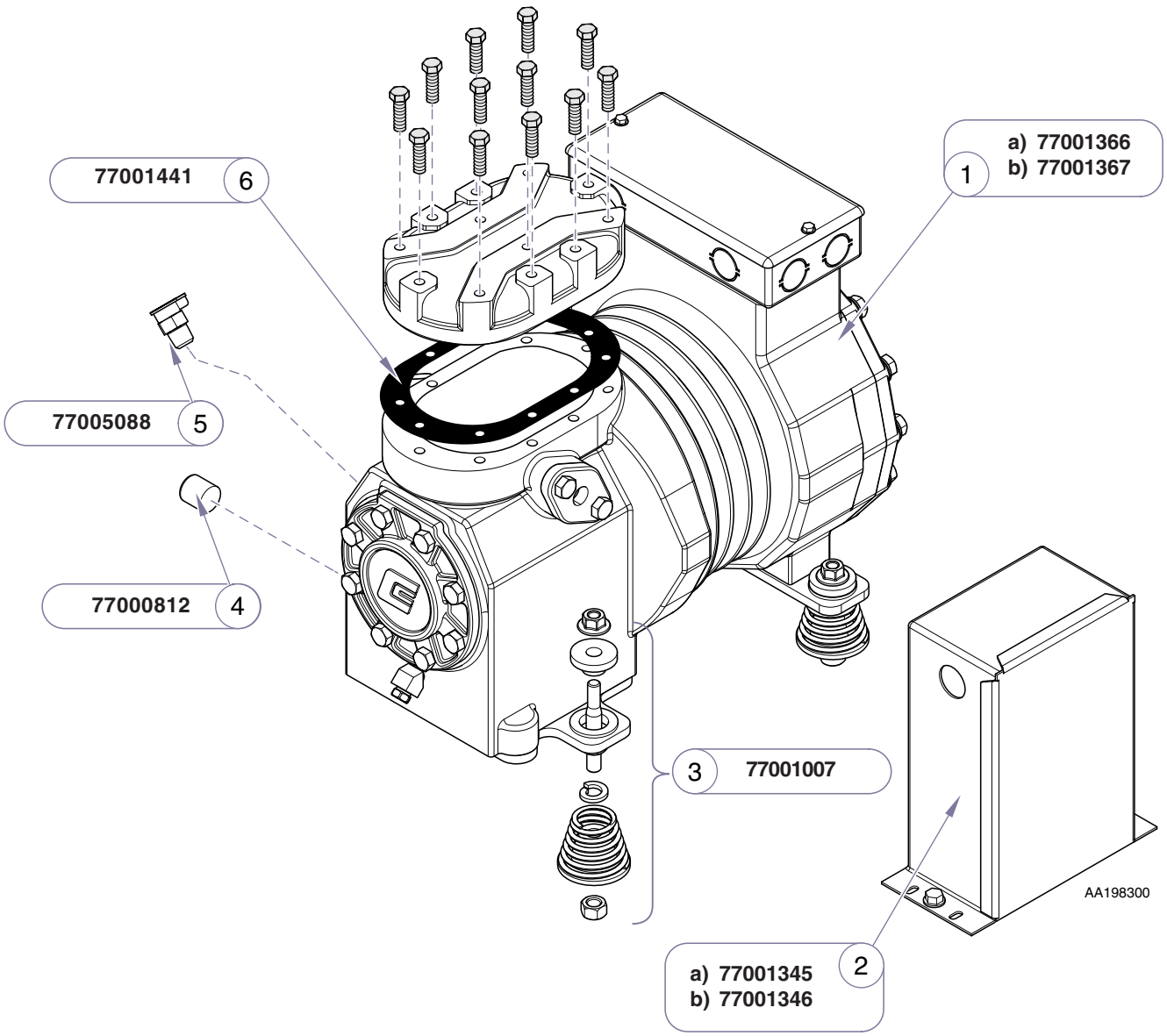

Item	Description	Qty.
1	Lubricated Compressor Head	
	a) 115 Volt Model	
	CL21	1
	b) 208/230 Volt Models	
	CL22	1
	CL32	2
	CL52	3
2	Capacitor / Relay Box	
	a) 115 Volt Model	
	CL21	1
	b) 208/230 Volt Models	
	CL22	1
	CL32	2
	CL52	3
3	Mounting Kit *(Includes 4 Mounts)*	1
4	Site Gauge	1
5	Oil Fill Cap	1
6	Gasket	1

Always Specify Model & Serial Number

Compressor Head

Models: *Serial Numbers:*	***CL21*** *0701L210001 thru Present*	***CL22*** *0701L220001 thru Present*	***CL32*** *0701L320001 thru Present*	***CL52*** *0701L520001 thru Present*	***All CLxx Models*** *V785000 thru Present*

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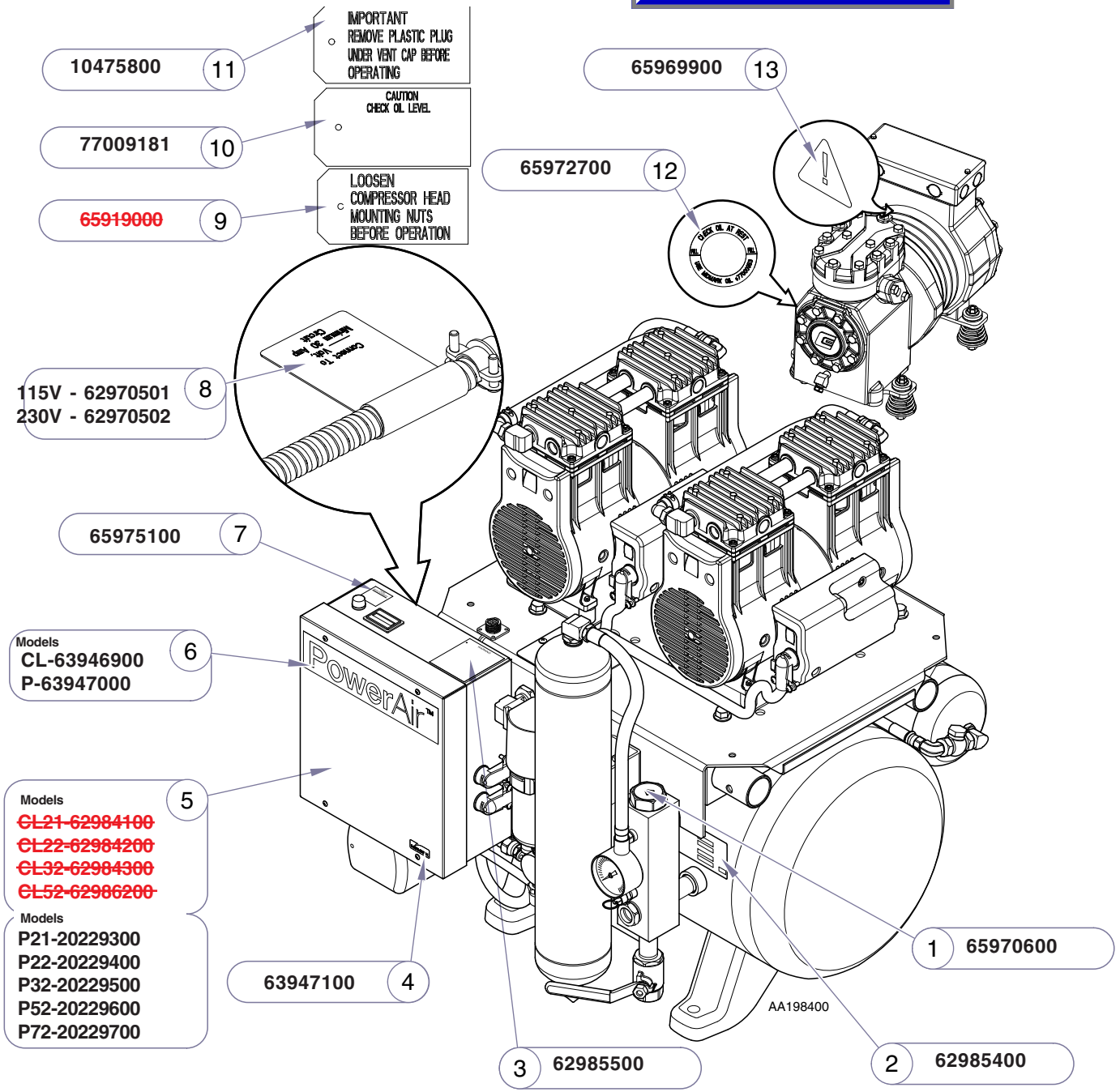

Item	Description	Qty.
1	Check Valve Location Label	1
2	Serial Number Label	1
3	Warning Label	1
4	Midmark Label	1
5	Marked in Red Denotes No Longer Avaliable - Schematic Labels	1
6	Brand Label	1
7	Fuse Replacement Label	1
8	Voltage Label	1
	Classic Series Lubricated Compressors Only have Items# 9-13	
~~9~~	~~Mounting Nut Tag NLA~~	~~1~~
10	Oil Check Tag	1
11	Remove Plug Tag	1
12	Oil Level Label	1

Always Specify Model & Serial Number

Models: ***Serial Numbers:***	***CL21*** *0701L210001 thru 0901L210370*	***CL22*** *0701L220001 thru 0903L220294*	***CL32*** *0701L320001 thru 0901L320807*	***CL52*** *0701L520001 thru 0810CL520124*	
Models: *Serial Numbers:*	***P21*** *0703P210001 thru 0903P210361*	***P22*** *0703P220001 thru 0903P221139*	***P32*** *0703P210001 thru 0903P321137*	***P52*** *0703P210001 thru 0902P520467*	***P72*** *0703P210001 thru 0903P720190*

Label Locations

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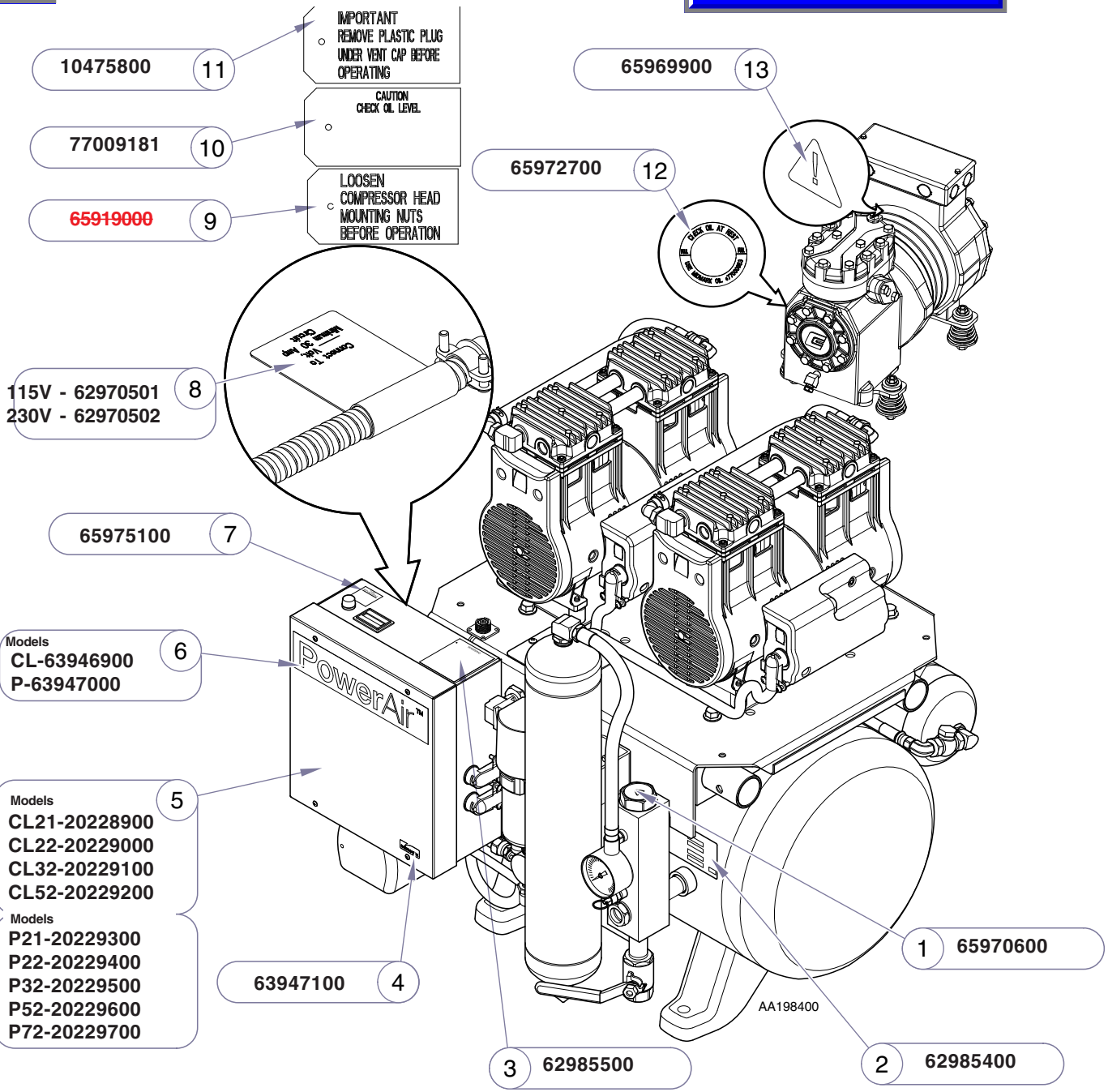

Item	Description	Qty.
1	Check Valve Location Label	1
2	Serial Number Label	1
3	Warning Label	1
4	Midmark Label	1
5	Schematic Labels	1
6	Brand Label	1
7	Fuse Replacement Label	1
8	Voltage Label	1
	Classic Series Lubricated Compressors Only have Items# 9-13	
~~9~~	~~Mounting Nut Tag NLA~~	~~1~~
10	Oil Check Tag	1
11	Remove Plug Tag	1
12	Oil Level Label	1

Always Specify Model & Serial Number

Models: / **Serial Numbers:**	**CL21** 0902L210372 thru Present	**CL22** 0903L220296 thru Present	**CL32** 0901L320813 thru Present	**CL52** 0810L520126 thru Present	**All** V785000 thru Present
Models: / Serial Numbers:	**P21** 0904P210365 thru Present	**P22** 0904P221146 thru Present	**P32** 0904P321145 thru Present	**P52** 0904P520474 thru Present	**P72** 0903P720191 thru Present

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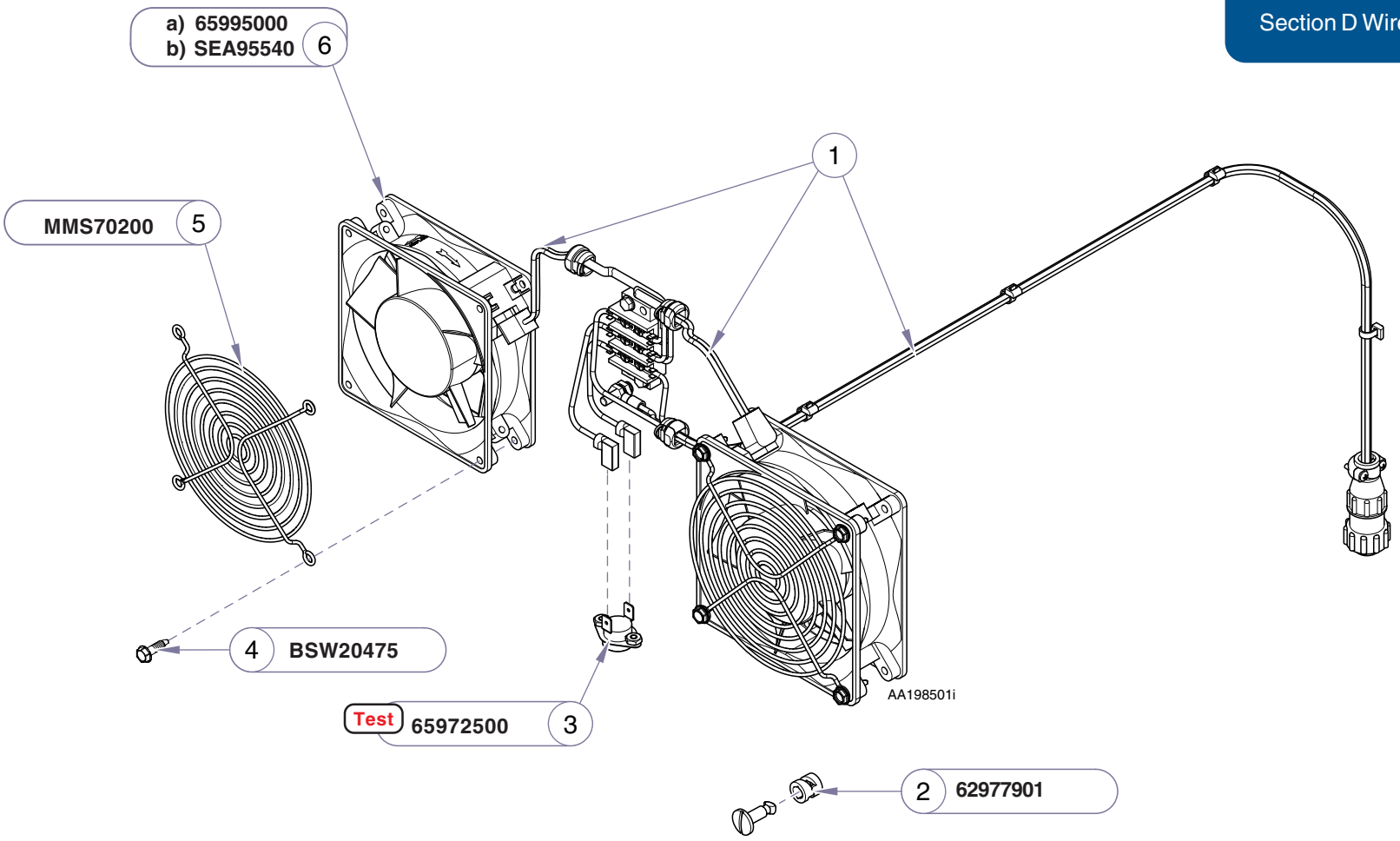
Refer To: Go To Page:
Section D Wire Diagrams .. Test ... D-1



Sound Cover	Accessory for PowerAir™ Model
77001603	P21
77001604	P22
77001605	P32 & P52
77001606	P72

Item	Description	Qty.
1	Fan Wiring .... Refer to Sec D Wire Diagrams	
2	1/4 Turn Fastener Straight Slot	4
3	Thermal Switch	1
4	Screw, Hex Head (#10-16 x 3/4")	4
5	Fan Guard	2
6	Fan:	
	a) *P21(115V)*	2
	b) *P22, P32, P52, P72 (230V)*	2

Always Specify Model & Serial Number

Models:	77001603	77001604	77001605	77001606
Serial Numbers:	0703SC1001	0703SC2001	0703SC3001	0703SC4001

Replacement Parts for Sound Cover Accessory

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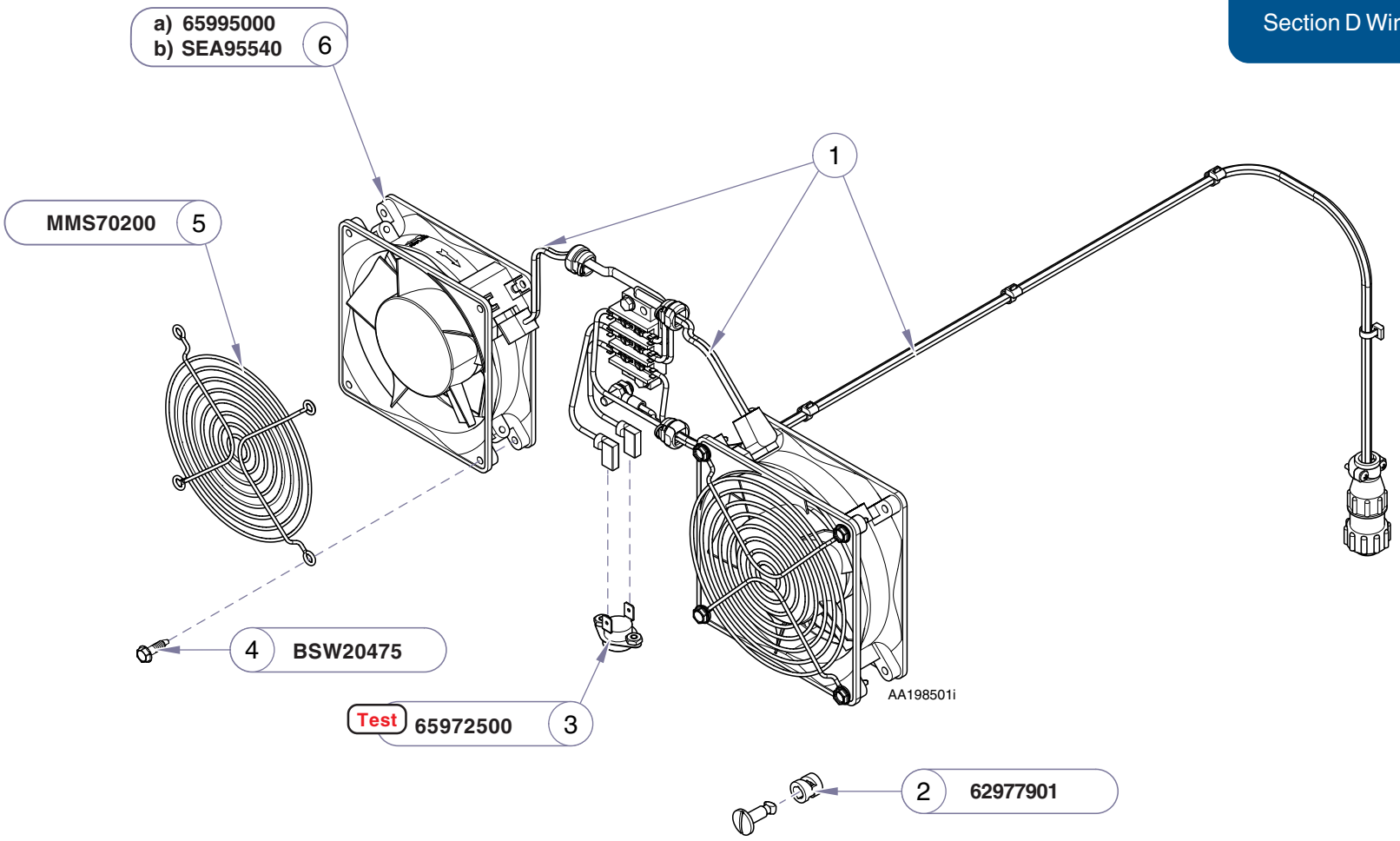
Section D Wire Diagrams .. Test ... D-1



Item	Description	Qty.
1	Fan Wiring .... Refer to Sec D Wire Diagrams	
2	1/4 Turn Fastener Straight Slot	4
3	Thermal Switch	1
4	Screw, Hex Head (#10-16 x 3/4")	4
5	Fan Guard	2
6	Fan:	
	a) *P21(115V)*	2
	b) *P22, P32, P52, P72 (230V)*	2

Always Specify Model & Serial Number

Sound Cover	*Accessory for PowerAir™ Model*
77001603	**P21**
77001604	**P22**
77001605	**P32 & P52**
77001606	**P72**

Replacement Parts for Sound Cover Accessory

Models: ***ALL***
Serial Numbers: *Built from 9/2009 to Present*

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IMPORTANT NOTES:

1) ***Use this form for all non-warranty orders only***. *Warranty orders must be telephoned in (1-800-643-6275).*

2) *FAX numbers to send order to:*

1-877-725-6495

3) *All emergency orders must be received @ Midmark by 1:00 pm EST.*

4) *All underlined headings should be filled in prior to submittal.*

ADDITIONAL COMMENTS:

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MIDMARK®

DATE: ____ / ____ / _____ TIME: _____ am pm

METHOD OF SHIPMENT: _____

PRIORITY:

☐ NON-EMERGENCY ORDER {to ship within 72 hours if part(s) are in stock.}

☐ EMERGENCY ORDER {to ship within 24 hours if part(s) are in stock.} [see note 3]

DEALER P.O. #: _____

ACCOUNT #: _____

MODEL #:	SERIAL #:	SALES ORDER # (if applicable)

NAME: _____

ADDRESS: _____

CITY: _____ STATE: ____ ZIP: _____

CONTACT: _____

PHONE: _____

FAX #: _____

SHIP TO: _____

LINE #	PART NUMBER	QTY.	DESCRIPTION	COLOR (if applicable)

CREDIT CARD INFORMATION

CARD TYPE _____ CARD #_____-_____-_____-_____ EXP. DATE _____ / _____ / _____

NAME ON CARD _____ SIGNATURE_____

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